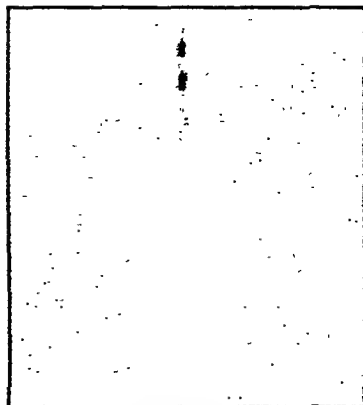


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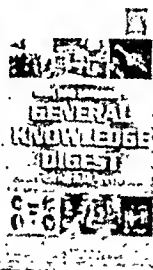
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Vajpayee Takes India To The New Millennium

There comes a moment in history when a nation can be proud of itself, despite its several black spots. We saw such a moment unfolding itself in October 1999, making the polity proud of its people who possess the uncanny ability to rise in judgement on issues concerning themselves and those who claim to give them a better governance. When the people of India are asked to choose between the good and evil, the right and wrong, the honest and dishonest, they know how to make the right choice, be they the educated in urban India or the unlettered millions in rural hinterland. They cast their vote with eyes and ears open. Thus, the Elections in 1999 for the 13th Lok Sabha could be a glowing tribute to India's multi-lingual, multi-religious and in many ways pluralistic democracy.

As the last result came in, there lay shattered like potsherd many myths. It is not absolutely essential for the entire electorate to have formal schooling to decide what type of leadership they should have. You cannot market "dynastic" politics without substance. Even the most wily politician has to submit to the verdict of the people's court.

Number 13 need not necessarily be unlucky for all, and it has proved lucky for Mr. Atal Behari Vajpayee and his able lieutenants: the BJP ruled India for a mere 13 days in 1996; 13 months in 1998-99 (excluding the caretaker government period); they have been elected with a majority for the 13th Lok Sabha and Mr. Vajpayee's Council of Ministers took oath on 13th October at 13 minutes past-twelve!

"The person who makes a success of living is the one who sees his goal steadily and aims for it unswervingly. That is dedication," said Cecil de Mille, a Hollywood director. How true is it in the case of our Prime Minister, Mr. Atal Behari Vajpayee for whom there is no failure except in no longer trying! Had he not embraced this positive credo, he wouldn't have been Prime Minister thrice, each time growing stronger than ever before and his party would not have grown from the two digits in the 70's or 80's to the biggest party in India replacing the Congress.

In several ways Elections '99 is a personal victory for Mr. Atal Behari Vajpayee and the principles and policies he stood for. The success of BJP and those



With the results announced by November 1, 1999, the NDA crossed the 300-mark bettering its record in 1998, with BJP improving its tally of 1998, paving the way for the easy formation of government.

The Congress Party led by Mrs. Sonia Gandhi was stripped bare in the people's court and it suffered its most humiliating defeat ever, its membership in the Lok Sabha falling to just 112— notwithstanding, its spectacular gains both in Uttar Pradesh and Punjab (where it rose from ashes to capture 10 and 8 seats respectively to Lok Sabha) as also in Karnataka with a bag of 18 seats (62%) in Lok Sabha. Nemesis overtook a party that once basked in the lost glory of Nehru and Indira Gandhi; the party that claimed to provide a stable government turned to be the No. 1 arch villain to "destabilise" the country, making itself culpable by imposing on the country one mid-term election after another, entailing huge expenditure and disrupting the economic progress of the country and slowing down domestic and foreign investment badly needed for the country. The party pulled down the Deve Gowda and Gujral governments and conspired with the unprincipled AIADMK and its supremo, Ms. Jayalalitha in bringing down the Vajpayee government without providing an alternative government. The party was punished deservedly for its betrayal of the people. Its attempt to brand BJP as "communal" had few buyers. The paradox has been that almost every party has been pandering to one caste or another or one religion or another and it is no secret that there are in Kerala constituencies which have become pocket boroughs of the Muslim League with which the Congress Party has been in alliance right from the 50s. Yet another salient fact is that the Congress Party has no leader of standing who can stand up to a statesman of stature like Mr. Atal Behari Vajpayee. Had there been leaders of foresight in the Congress Party, the party would not have stooped to the gimmicks which the likes of Mr. Sitaram Kesri had indulged in and raise overnight someone of the Indira Gandhi family whose credentials to the position of party president rested on the dynastic connection rather than experience. Once again sycophancy has taken its toll and it allowed its logical slide to doom despite the presence in the party of relatively untainted leaders like Mr. Madhav Rao Scindia, Mr. Manmohan Singh and Mr. A.K. Antony.

The people's verdict of 1999 has also shown that the so-called anti-incumbency factor need not necessarily always work towards the disadvantage of the ruling party or coalition. If the party in power has been sincere and honest to the people. The return to power of the BJP-led coalition at the Centre and the Telugu Desam in Andhra Pradesh



*Railway Minister Mamata Banerjee
—the only Woman Cabinet Minister*

as also the reversal of fortunes for ruling NDA in Karnataka, Punjab and Uttar Pradesh shows that people can tell the sham from the real.

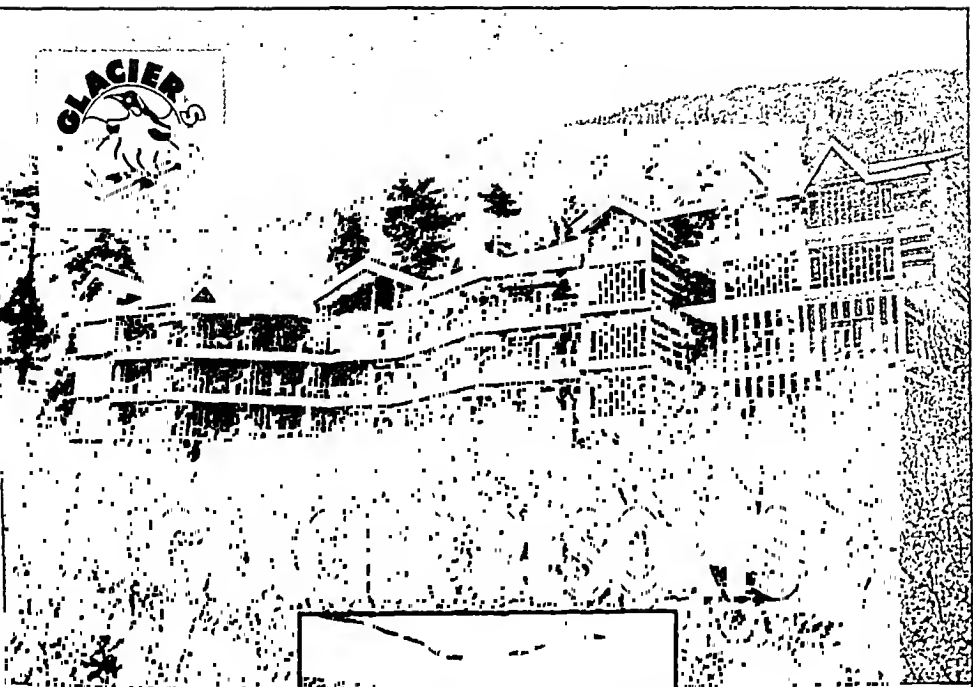
But Humpty Dumpty can rise again if the National Democratic Alliance, with the BJP in particular, shows any chink in its armour. Ms. Jayalalitha functioned as the discordant note in the harmony that Atalji strove assiduously to achieve and there were enough vultures to prey upon when the system was about to fall. This shows the great need for the 24-party coalition to stay together for five years and give good governance for the country under a common agenda. The nation expects the Vajpayee government to settle down to business soon and attend to every item of work that concerns the common man. That the NDA government has a good team and has the whole-hearted support of almost every region in the country augurs well for the future and the agenda it may formulate. The induction of intellectuals like Mr. Arun Shourie and Arun Jaitley in the Union Cabinet would surely enhance the image and performance of Vajpayee Government.

The economy needs a kick-start; the defence sector merits a boost in the light of the Kargil War and the imperatives of preventing future Kargils. The rise to power of General Pervez Musharraf, a known India baiter and no-compromiser on Kashmir issue, also does not augur well for India, especially because an irresponsible and die-hard General may push the nuclear button anytime of his choice. But the most neglected sector, all these 50 years and more, has been the social sector: the sickening hospitals and rudimentary medicare, the schools without roots, the classrooms without teachers, the school dropouts, the growing illiteracy, the



uncontrolled population, the slums, the rising unemployment, the drinking water problem in cities and villages, the environmental degradation, the poor housing situation and the like. The government has also to tackle the parallel economy run by black money and stamp out corruption. Things easier said than done! The Lok Pal Bill has been hanging fire for more than four decades. Nearly half of the population comprising women are still looked down upon as second class citizens and a bill to give due representation to them is yet to be passed by Parliament.

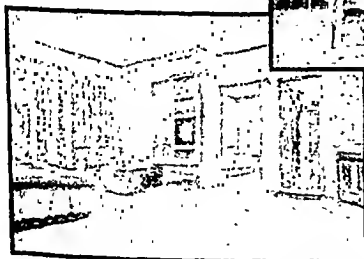
The BJP-led government had set up task forces on Information Technology, Infrastructure and Tourism and all these task forces have to work again with renewed energy to make up for the lost time (As a follow-up, the Vajpayee Government has already constituted an Independent Ministry of Information Technology under Mr. Pramod Mahajan for facilitating the initiatives in the Central Government, State Governments, academia, the private sector and the successful Indian professionals abroad. The Ministry will implement a comprehensive action plan to make India an IT superpower in the early part of the next century and achieve a target of \$ 50 billion in software exports by 2008). Let us look at our own neighbour China, which has achieved phenomenal success in all fields—economic, space, scientific, industrial (including defence) during the last 50 years. Though a democratic India cannot enforce legislation at the point of gun like China, yet we must work unitedly—ruling party and Opposition—on national issues such as population control, strict enforcement of law and order, honest expenditure of MP Development Area Funds to provide basic amenities to people, electoral reforms etc. with a national consensus like Western democracies of UK, France and Nordic countries. But all the programmes can be implemented only if there is political stability. In the years to come, the NDA has to function as an indivisible whole, if they want to maintain the trust people have reposed in them and if they want to do their best for the people. It is high time the Opposition too behaved as a responsible opposition and gave "constructive" support to the government. The time has come to leave behind all petty bickerings and work unitedly for a better India where no child goes to sleep on an empty stomach, where every woman feels secure within her home or outside, where everyman enjoys the dignity of either a blue-collar or white collar labourer, where the Hindus, the Muslims, the Christians and the Sikhs must reassure themselves that the *narti* from the temples, the resonance of the church bells, the muezzin's call to prayer from the mosque and the *sabad kirtan* from the gurdwara all remind us all of the same God residing in the hearts of all. U



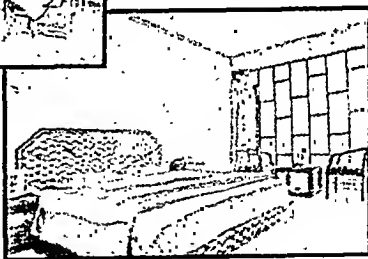
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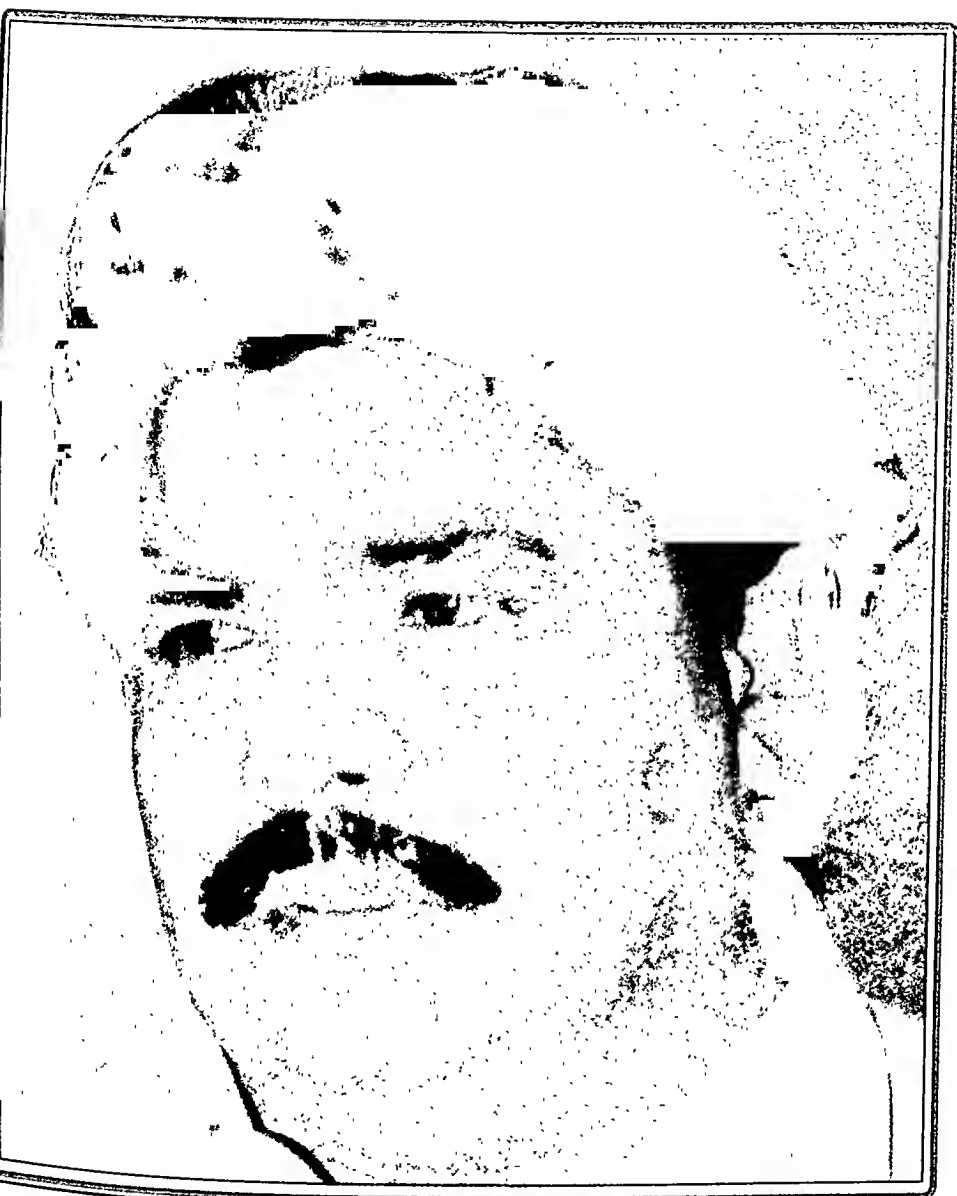
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G.M.C. Balayogi

Elected Speaker of the 13th Lok Sabha for the second consecutive term on October 22, 1999. He was also the Speaker of the 12th Lok Sabha

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Mpule Kwelagobe

The 19-year-old Miss Botswana crowned Miss Universe '99 on May 26, is being warmly hugged and congratulated by other contestants at the Miss Universe Pageant in Chaguramas, Trinidad and Tabago

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Mahesh Bhupathi

The Indian Tennis Star clinched the US Open Mixed Doubles '99 title. Bhupathi has won four Grand Slam titles so far—three in 1999 (French Open Men's Doubles, Wimbledon Men's Doubles & US Open Mixed Doubles) and one in 1997 (French Open Mixed Doubles)



Steve Waugh

Jubilant Australian Captain Steve Waugh lifts the World Cup after defeating Pakistan by eight wickets in the final at Lords on June 20, 1999. Lance Klusener of South Africa emerged Player of the Tournament



Saurav Ganguly

A jubilant Saurav Ganguly with his teammates after receiving the Fiat Siena Car in New Delhi on November 17, 1999 after being declared the Pepsi Cup Man of the Series (India vs. New Zealand). India won the five One-Day Series (3-2)



Serena Williams (US)

The giant-killer clinched her first Grand Slam defeating World No. 1 Martina Hingis (Switzerland) in the US Open Women's Singles Final on September 11, 1999

Part II

1999 At A Glance

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Vajpayee Takes India To The New Millennium

Mr. Atal Behari Vajpayee, the septuagenarian leader representing the modest face of the party who steered the BJP-led National Democratic Alliance comprising 24 like-minded political parties across the length and breadth of the country to a comfortable majority in the elections to the 13th Lok Sabha, has the unique distinction of being the first "non-Congress" Prime Minister forming the government with a clear majority without the need to cobble up majority and seek confidence vote from many of his predecessors such as Mr. V.P. Singh, Mr. Chandra Shekhar, Mr. H.D. Deve Gowda and Mr. I.K. Gujral. Besides, he has earned the creditable role of leading the biggest democracy of the world into the New Millennium.

It was the grand strategy of this veteran of many electoral battles to hammer out a "National Agenda" with the consensus of all the constituents of the NDA as also the indefatigable efforts and indomitable spirit of this versatile orator that won the NDA with an unquestionable mandate in the 1999 elections to the satisfaction of the President who invited him to take oath of office as the 13th Prime Minister of India on October 13, 1999. Under coalition compulsions, Mr. Vajpayee had to go in for a jumbo-sized ministry of 74; with representation to women (7 ministerial berths by Ms. Mamata Banerjee, the lone Cabinet Minister). He has also inducted intellectuals such as Mr. Arun Shourie and Mr. Arun Jaitley in his cabinet.

There is hunger for development, time is running out and the people are getting impatient, so warned the Prime Minister, Mr. Atal Behari Vajpayee while addressing the national executive committee of the BJP in New Delhi soon after victory at the hustings. In fact, the Prime Minister was reminding his countrymen of the supreme confidence the people of India had reposed in his government that it would take better care of the needs of the people than governments that preceded it. It was a message from the core of his heart when he said that the people were not asking for the moon; they only wanted basic facilities such as clean drinking water, employment and access to education and health services.

In his first address to the nation (October 16, 1999) after assumption of office, Mr. Vajpayee pledged to fight terrorism and corruption. The Prime Minister spoke of "a government that cares and a government that will take care of the last person in the last row. He promised to redeploy resources and rearrange institutions to provide for all: safe drinking water, primary health services, primary education, rural roads and rural housing. And he sought the cooperation of the private sector in this endeavour. He said that he was in favour of private-sector-friendly regime and would ensure "second generation reforms" all intended to usher in a "proud, and prosperous India." "We are pledged to the emergence of a new India in the new century."

Mr. Vajpayee warned that terrorism would be dealt with sternly: "the life of every Indian citizen under our dispensation is precious." The Prime Minister also emphasised electoral reforms and the campaign against corruption, while reaffirming his faith in the "lofty principles of Secularism, Social Justice, Social Harmony and Women's Empowerment."

Addressing the joint sitting of Parliament the President elaborated on the agenda of his new government. According to him, during the current year, the Indian economy is expected to grow over six per cent. Inflation as measured by the wholesale price index is around two per cent, which is the lowest in the last two decades. Despite an adverse global economic environment, our balance of payments position has remained comfortable and our foreign exchange reserves are at a record level of nearly \$ 33 billion.

On the front of economic reforms, the government policy would rest on a triad in which the government provides a strong policy and regulatory leadership; the private sector brings the dynamism and efficiency of the competitive environment; and the local democratic institutions and civil society bring about people's participation.

Mr. Narayanan announced that his government has decided to give topmost priority to the social sector development. In the field of education, a separate department of Primary Education and Literacy has already been created. The face of rural India will change beyond recognition. The newly created department of drinking water supply in the

Ministry of Rural Development will implement a programme to provide clean drinking water to all villages in the next five years. Fifty per cent of the diesel cess would be earmarked for construction of all-weather roads in rural India. It is planned to have 20 lakh additional housing units each year, and of these 13 lakh would be built in rural areas.

In several sectors, the Vajpayee government is seeking to complete the jobs taken up in 1998, but which could not be completed because of the fall of government. For instance, the BJP-led government started working on the recommendations of the task force on information technology in 1998 and after the new government took over, it has set up a new Ministry of Information Technology for facilitating the initiatives in the Central Government, State Governments, academia, the private sector and the successful Indian professionals abroad. The Ministry will implement a comprehensive action plan to make India an IT superpower in the early part of the next century and achieve a target of \$ 50 billion in software exports by 2008.

The new Telecom policy would seek to achieve the objective of providing universal access to world-access telecom services at the lowest possible price to the public. The Communications Minister, Mr. Ram Vilas Paswan, announced on October 14, 1999 that the government would provide phones in all villages by 2002. The government has also plans to provide Internet to villages and modernise exchanges.

The Government proposes to create 10 crore additional jobs in ten years. For this a Task Force on Employment has already been set up in the Planning Commission under the chairmanship of its member, Mr. Montek Singh Ahluwalia. The authorities also propose to review the existing Foreign Direct Investment (FDI) regime in order to cut delays in project implementation and create an enabling policy to ensure FDI inflow of at least \$ 10 billion annually.

Mr. Vajpayee starts his third Prime Ministerial stint with the fortuitous advantage in that the US Senate has rejected the signing of CTBT, thus removing a big stumbling block in Indo-US relations which can now be firming up on a better keel to jointly fight international terrorism and fundamentalism—both USA and India have been singled out as enemies No. 1 by Osama Bin Laden—and extend cooperation in economic, scientific and other fields.

However, the military coup in Pakistan leading to imposition of martial law, heightens the danger of escalation of proxy war and cross border terrorism and even pushing a nuclear button by an avowed anti-Indian Mughal army chief and a no-

compromiser on Kashmir issue (Pakistan is the only nuclear weapons capable country who civilians do not control nuclear weapons). In the changed security scenario, India has to sharpen the teeth of its conventional weaponry and keep still greater vigil on our borders especially in Jammu and Kashmir and not be misled by the offer of talk or withdrawal of forces from borders by this hard anti-Indian Pak General.

Balayogi Speaker And Sayee Deputy Speaker

Mr. G.M.C. Balayogi of the Telugu Desam Party took over as the Speaker of the Lok Sabha for second consecutive term on October 22, following his unanimous re-election.

Mr. Balayogi's re-election was a smooth-sail affair after the Congress and other Opposition parties agreed to support his candidature as a healthy gesture towards NDA's support for candidature of Mr. P.M. Sayeed (Congress) Deputy Speaker of the Lok Sabha.

Mr. P.M. Sayeed, a veteran parliamentarian was elected a record tenth time to the Lok Sabha from Lakshadweep in the 1999 polls, unanimously elected Deputy Speaker of the Sabha on October 27, 1999.

Pope John Eulogises India's Secularism

During his four-day visit to India Pope John was given red carpet welcome by the leaders people of India in conformity with this land's tradition of hospitality. Despite heavy security, Pope found time during the four days from November 5 to 8, 1999 to rub shoulders with commoners and the dignitaries. The Head of Vatican conceded that there was greater religious freedom in India than in many other countries. One of the highlights of the papal visit was the mass conducted in the thickly crowded Jawahar Nehru stadium in New Delhi.

Pope John Paul is the first Polish Pope in history of the Roman Catholic Church, which traces its origin to St. Peter, one of the first Apostles. Ascension to the papal throne came after continuing succession of Italian Popes for years.

Second National Labour Commission Constituted

A second National Labour Commission under the Chairmanship of the former Labour Minister Mr. Ravindra Varma was constituted by the Government on October 16, 1999. The 10-

Commission would seek to rationalise labour laws in the organised sector and formulate comprehensive legislation for workers in the unorganised sector. The terms of reference of the Commission would include follow-up on the implications of the recommendations made by a panel set up in May 1998 to review various administrative laws governing industry.

The labour front is undergoing traumatic changes in the wake of economic liberalisation and the technological revolution. The Commission would focus on the impact of the changes on labour and accordingly make appropriate recommendations. The Commission would submit its recommendations in just two years.

Besides Mr. Ravindra Varma, the Chairman, the other members of the Commission are Mr. B.R. Sahade, Mr. Sunil Shastri, Mr. Sudarshan Sarin, Mr. Sanjeeva Reddy, Mr. Jitendra Vir Gupta, Ms. Ela R. Bhatt, Mr. Arvind R. Doshi, Mr. Hasubhal Dave and Mr. N. Sanyal. Mr. Sanyal would be the Member-Secretary.

At a meeting of the commission held on November 4, 1999, it was decided to set up six study teams to review various labour laws including social security. The study teams would cover existing labour laws in India and other countries; make recommendations on "umbrella" legislation for the informal sector; study impact of globalisation on labour; social security; women and child labour; and the upgradation of skills and education of workers. At its first meeting the Commission decided to send a questionnaire to Industrial workers, different government departments, public sector units, state governments and trade unions.

It may be recalled that the first National Labour Commission was set up in 1966 and a second Commission has come too late in the context of the breathtaking changes in national and global economies and the technological innovations. Laws must change with the changing situation and must safeguard the interests of both the labour and the entrepreneur. There have been instances of technological changes triggering corporate downsizing, causing job losses. Income disparities and the poor bargaining power of the labour have become part of the fallout of the globalisation process. But the most vulnerable has been the vast labour force in the unorganised sector—the marginalised labour force of unprotected labour comprising poor men, women and children who comprise 90 per cent of the labour force. The organised sector accounts for barely 27 million of the entire workforce estimated at about 286 million.

Congress-NCP Government In Maharashtra

A hung assembly exacts its exorbitant price in terms of frequent bickerings and mutual suspicion when patchwork coalitions are formed. But the greatest casualty of shaky coalitions—brought about by marriages of convenience—is instability. The partners who strike a deal only tend to postpone their date of separation. That has been the ordeal of Maharashtra where there was a prolonged period of uncertainty in the wake of a fractured mandate throwing up a hung assembly. While there was quick ministry formation in States like Andhra Pradesh, Karnataka, Arunachal Pradesh and Sikkim, the Governor of Maharashtra Dr. P.C. Alexander had to emerge as taskmaster setting a deadline for the formation of a new government as major political parties were locked in indiscriminate horse-trading.

With the BJP-Shiv Sena combine making a poor show in the Assembly elections, the one-time divorcees were together, albeit reluctantly. The Congress of Mrs. Sonia Gandhi and the National Congress Party (NCP) led by Mr. Sharad Pawar made a bid to share power in Maharashtra. Mr. Vilasrao Deshmukh of Congress became the new Chief Minister of Maharashtra and Mr. Chhagan Bhujbal of NCP, the Deputy Chief Minister. And they were sworn in on October 18, the deadline set by the Governor for the formation of the new government.

The new coalition government in Maharashtra also roped in the Peasants & Workers Party, CPM, Janata Dal (S), Samajwadi Party, Republican Party of India and Bharatiya Bahujan Mahasangh.

An interesting aspect of this Congress-led combine is sharing of power by the Samajwadi Party of Mr. Mulayam Singh Yadav, an avowed opponent of Mrs. Sonia Gandhi as Prime Minister of India because of her foreign origin (like Sharad Pawar-led NCP) under Congress umbrella.

US Waives Economic Sanctions Against India

It was announced on October 28, 1999 that the US President Mr. Bill Clinton had waived the economic sanctions imposed on India and had retained all but two against Pakistan. With regard to India, the President has continued a waiver of the post-nuclear test sanctions, which allows American commercial bank lending to continue as also loans by the Export-Import Bank. In regard to Pakistan, the waiver relates to commercial lending and agricultural credits only.

Said a spokesman of the US National Security Council, Mr. Mike Hammer: "The differ-

of the two countries reflects the reality that things have changed for the worse in Pakistan ... Basically we have made clear from the start that there can be no business as usual with Pakistan until an elected government is restored." Under Section 508 of the Foreign Assistance Act, the US President is mandated by law to cut off assistance to a country where a civilian elected government is overthrown.

India has welcomed the waiving of economic sanctions against India by the US as a positive gesture towards normalising relations between the two countries. The sanctions were imposed in the wake of Pokhran II. India hopes that the waiver would create a congenial atmosphere in the context of the proposed visit of President Clinton to India early next year.

Bofors Case Back To The Centrestage

Much to the embarrassment of the Congress, and more particularly the loyalists of the Congress President, Mrs. Sonia Gandhi, the Bofors case was back in the limelight again. The first ever chargesheet in the 13-year-old Rs. 64-crore payoff case was filed in the Designated Court of the Special Judge, Delhi, Mr. Ajit Bharghoke, on October 22, 1999.

The chargesheet names as accused the former Prime Minister, Rajiv Gandhi, the former Defence Secretary, Mr. S.K. Bhatnagar, the Italian businessman and friend of the Gandhi family, Mr. Ottavio Quattrocchi, the former Bofors agent Mr. Win Chadha, the former Bofors President, Mr. Martin Arbo and M/s AB Bofors of Sweden.

The assassination of the former Prime Minister Rajiv Gandhi made those who prepared the chargesheet to lay down the observation, "not sent up for trial". The chargesheet also mentions the charges of conspiracy, cheating and offence under the provisions of the Prevention of Corruption Act, 1947 against Rajiv Gandhi who awarded the Rs. 1,437 crore contract to AB Bofors in March 1986. According to the chargesheet, the probe by the investigation agency proved beyond doubt that the accused were parties to a criminal conspiracy in awarding the contract to M/s AB Bofors for supply of guns. The chargesheet mentions the various acts of omission and commission by the chargesheeted. The fact that Mr. Quattrocchi, Mr. Chadha and the Hinduja brothers were appellants in Swiss courts and that they subverted the transfer of documents of India testifies to the fact kickbacks were paid by the Bofors and received in their accounts.

Mr. Chadha and Mr. Quattrocchi went a step further by transferring funds so received from one account to another to avoid detection and evade the process of law.

The CBI seems to have spread its net far and wide and in the process they have blocked the escape routes of some of the smaller fish. The dubious role of Mr. G. P. Prakash and Mr. Srichand—the Hinduja brothers—apart, the CBI was looking for other quarries—Harsh Chadha, son of Mr. Win Chadha, Ms. Maria Quattrocchi and others. The slushes are determined to go the whole hog, and they have embarked on several letters Rogatory in Switzerland, Sweden, Panama, Luxembourg, Bahamas, Jordan, Liechtenstein and Austria. It is believed that the Hinduja brothers have indissoluble links with the top political brass in India.

The chargesheet running into 25 pages is backed up by 213 documents and depositions of 83 witnesses, running into a massive 2,500 pages.

The boom of the Bofors gun scandal set tremors across the Congress Opposition in the Lok Sabha, and the loyalists of Mrs. Sonia Gandhi raised the demand that the name of Rajiv Gandhi be deleted on the plea that he was dead and could not defend himself. The government said that could not dictate terms to the CBI, which was a 'Independent' Investigating agency. Intervening in the discussions in the Lok Sabha the Prime Minister, Mr. Atal Behari Vajpayee assured the agitated Congress members on October 28, 1999 that his government had no objection to a full-scale debate on the Bofors issue.

Interestingly while jumping in the 1999 election fray, Mrs. Gandhi had herself challenged Government to probe the Bofors deal to its logical conclusion; implying thereby that there was nothing against Gandhi family.

As the Bofors case gained momentum, the designated Delhi special court issued on November 1, 1999 non-bailable arrest warrant against the accused Italian businessman Ottavio Quattrocchi and summons to Dubai-based Bofors agent Win Chadha, former Defence Secretary S. K. Bhatnagar and former Bofors company chief Martin Arbo and the Swedish company A.B. Bofors, now renamed "Celsius".

Bofors is the first ever scandal of devilish proportions in the nation's defence deal which came to surface, thanks to the extensive coverage by the media by way of investigative journalism, compelling Rajiv Gandhi to assert that nobody, however high he might be, would be spared when the recipients of the kickbacks were known after investigation.

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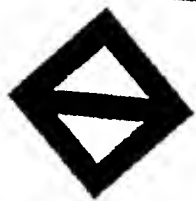
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Diesel Price Hiked

The government had to go in for a sharp increase in the diesel price following a sharp rise in the international prices of crude oil and diesel during the last nine months. Between February and September 1999, the international price of crude oil went up from Rs. 3210 to Rs. 7020 per metric tonne, i.e., by 119 per cent. This compelled oil companies in India to pay international prices for crude oil and diesel. Domestic diesel prices have been fixed on the principle of import parity since November 1997.

The hike in the basic price of diesel announced on October 6, 1999 has been only to the extent of 40 per cent, though the international price of diesel since the last revision has gone up by 66 per cent.

The hike in diesel price triggered an increase in passenger bus fare in many states and a rise in freightage of goods transport.

Trucks all over the country went off the road for six days as per protest strike; though government did not yield on the issue of lowering the diesel price, it did meet half way some of the other demands of the representatives of the All India Motor Transport Congress. In Delhi, the DTC hiked bus fares by 100 per cent in one stroke on the pretext of rise in diesel prices.

SC/ST Quota In Lok Sabha Extended For Ten Years

The Lok Sabha and the Rajya Sabha have passed a Constitution Amendment Bill during the last week of October 1999 extending reservation of seats in Parliament and State Assemblies for Scheduled Castes and Scheduled Tribes for another ten years. The Bill, which also provides for representation of Anglo-Indians by nomination for another ten years was passed with 380 voting for and none against in the mandatory division required for passage of a Constitutional amendment.

While moving the Bill, Mr. Ram Jethmalani, Union Minister for Law, Justice and Company Affairs, disclosed that a convention of MPs belonging to SCs/STs would be held before the winter session of Parliament and that the recommendations of the convention would be placed before Parliament.

A senior Congressman, Mr. Buta Singh wanted the scope of reservation to be extended to the Rajya Sabha and the legislative council as well as specialised institutions, judiciary and armed forces. According to him there has not been much change in the status of people belonging to the SC & ST despite reservation for more than half a century. He wanted the government to take such solid steps for their welfare and development which would obviate the need for yet another period for

reservation.

A large section of the MPs feel, however, that attitudinal change alone, rather than reservation, would alter the socio-economic status of the SCs and STs. It needs to be examined why the benefits conferred by the government are not really percolating to the vast needy majority among the SC/ST communities. Does it mean that all the "privileges" are cornered by the "creamy layer" of the SC/ST communities?

Mr. Prakash Ambedkar of the Republican Party of India took up an entirely different line of thinking. He said that reservation itself would not change society and stressed the need to bring all communities on one platform with a positive integration. He claimed that "merely extending 10 years' reservation, we are not achieving anything ... reservation is a hindrance to development ... Let us make a move towards social mobility."

Unfortunately the creamy layer of SC/ST having risen up the reservation ladder continue to harvest the privilege for their children as well denying it to their unprivileged brethren. Unless such persons are excluded, reservation would have to be continued for decades due to vote-bank politics; whatever be the political complexion of the government at the Centre.

Meanwhile, the OBC list continues to swell. The Government has recently decided to add (November 19) 126 sub-castes from 15 States and 2 Union Territories to the OBC list, on the recommendation of the National Backward Classes. Jats in Rajasthan and Delhi have already been included in the OBC category mainly due to vote-bank politics.

Law Commission Focuses On Poll Reforms And Women's Rights

In its 170th report, the Law Commission headed by former Supreme Court Judge, Mr. Justice B.P. Jeewan Reddy has recommended sweeping electoral reforms including elimination of the deleterious trends of proliferation and splintering of political parties.

The 15th Law Commission would like the government to introduce a fresh chapter in the Representation of the People Act, regulating the formation and functioning of political parties, all with an intent to ensure internal democracy. It stressed the necessity of having elections once in five years for the Lok Sabha and the Assemblies. The Commission also has suggested revision of the anti-defection law and has proposed that a pre-election front or coalition of political parties should

be treated as a "political party" for the purpose of the Tenth Schedule.

Further, any political party that receives less than five per cent of the total valid votes cast in the general elections to the Lok Sabha or the State Assembly should not be entitled to any seat in the Lok Sabha or State Assembly even if it wins any seat. The Commission has suggested the desirability of adopting a rule by which only a candidate obtaining 50 per cent and above of the votes polled should be declared elected.

A major recommendation of the Commission is that independent candidates be barred from contesting elections for the Lok Sabha and the State Assemblies.

On the state funding of political parties, the Commission has reiterated the recommendations in the Indrajit Gupta Committee report, subject to certain changes. Similar provisions can be found in several other democracies. The Commission has recommended that in case of electoral offences, the framing of a charge by a court should itself be a ground for disqualification in addition to conviction.

The other major recommendations of the Commission cover the use of electronic voting machines and the restriction on "no-confidence motion".

A Nuclear Doctrine For India

India will not be the first to use a nuclear weapon against any country, but it will retaliate with nuclear weapons, if attacked. India will also not threaten the use of nuclear weapons against states which do not possess nuclear weapons or are not aligned with nuclear weapon powers.

These are some of the highlights of the draft Nuclear Doctrine released by the National Security Advisory Board (NSAB) in New Delhi on August 17, 1999. For public debate to enable the government to take a final decision. The document envisages assured capability to shift from peacetime deployment to fully employable forces in the shortest possible time and the ability to retaliate effectively.

According to the document, India will pursue a doctrine of credible nuclear deterrence. India's nuclear forces will be based on triad of aircraft, mobile based missiles and sea-based assets. Nuclear weapons shall be controlled and released for use at the highest political level; the Prime Minister or the designated successor will alone have the authority to release nuclear weapons for use.

According to the doctrine, India shall continue its efforts to achieve the goal of a nuclear weapons-free world at an early date. Since no-first-use of

nuclear weapons is India's basic commitment, India would strive its best to persuade other state possessing nuclear weapons to join in an international treaty banning first use of the weapons.

The document says that in view of the very high destructive potential of nuclear weapon appropriate nuclear risk reduction and confidence building measures shall be sought, negotiated and instituted. India's nuclear forces and their command and control shall be organised for very high survivability against surprise attacks and for rapid punitive response. They shall be designed and deployed to ensure survival against a first strike. Deterrence requires that India maintains sufficient survivable and operationally prepared nuclear devices, a robust command and control system. At the same time, it would follow any move by the nuclear weapon states to destroy nuclear weapons and make the world free from the destructive weapons in a time-bound manner, according to Prime Minister Mr. Atal Behari Vajpayee.

Pakistan and USA reacted to India's Nuclear Doctrine the negative way and argued that it could lead to an arms race in the subcontinent.

Population Explosion

On its 52nd Independence Day on August 15, 1999, India achieved the dubious distinction of joining the "Demographic Billionaire Club" along with China with its population crossing the one-billion milestone. (Some term 11th May, 2000 as the date). Thus, if not on economic front, on demographic front at least, we have raced to deprive China of monopolising the Billionaire status. At the present rate of "demographic progress", we are poised to overtake even China as the most populous nation in the world in the next four decades, as per projections of United Nations Fund for Population Activities (UNFPA). Despite allocation of huge fund (Rs. 3000 crore during 1998-99) for family planning, there is no significant fall in population growth. It is presently 1.6% in contrast to 0.9% for China. With a geographical area of just 2.4% of the world, we bear the burden of 16% of global population. The comparative figures for China are 7% of global area and 20% population; USA 7%/6% and Russia 12%/5%. Naturally with such a big burden on land, a "democratic" India (unlike an authoritarian China) cannot afford to take drastic coercive measures and consequently finds itself in a quagmire of poverty, dearth, disease, illiteracy and squalor with its national income constituting barely 2% of the total world income. Even among the SAARC countries, our per capita income (\$ 380) is much

POPULATION TRENDS

Year	Population (Million)	Annual Growth Rate
1901	238	0.14
1911	252	0.59
1921	251	-0.04
1931	279	1.12
1941	319	1.43
1951	361	1.32
1961	439	2.16
1971	548	2.48
1981	683	2.46
1991	846	2.39
1999	1000	1.82

(August 15)

lower than even Maldives (\$ 1,032), Sri Lanka (\$ 740) and Pakistan (\$ 480). Of course, we can have the consolation of being ahead of such Least Developing Countries like Bangladesh (\$ 280), Nepal (\$ 210) and Bhutan (\$ 163). In the comity of nations, we are ranked at a woefully low rank—132nd as per World Bank's Human Development Index. All our advancement in nuclear field (Pokhran II), space exploration through satellites and the economic strides made through nine Five-Year Plans appear only cosmic in the context of backwardness scenario we are pushed to through population explosion which is nullifying all progress. In fact, the starvation deaths in Orissa and elsewhere, the growing numbers of ill-clad, shelterless under and malnourished populace—all indicate to the pointer that the long-discarded Malthusian forecast is going to prove true at least in our case, unless we take timely steps to control the burgeoning population.

No Reservations In Super Speciality Courses

It was once again the Judiciary which intervened, though to a limited extent, to stop the spate of indiscriminate reservations for weaker sections, launched after Mandalsation of Indian politics and patronised by various casteist parties like Samajwadi Party and the RJD of Mr. Laloo Prasad Yadav as also under compulsive electoral politics by national parties like BJP and Congress; the latter even committing to 10% reservation of jobs for minorities as also for the affluent Jat community purely with the aim of capturing power.

In a landmark majority (4-1) judgement, a 5-member Bench of Supreme Court including Chief Justice Dr. A.S. Anand and others, ruled (August 12, 1999) that competitive merit alone should be the criterion for admission to super

speciality medical and engineering courses as caste-based reservation at these levels would be against national interest. Delivering the judgement, Mrs. Justice Sujata V. Manohar said, "Admission to the highest available medical courses in the country at the super speciality levels, where even the facilities for training are limited, must be given on the basis of 'competitive merit.'" She further added, "While the object of Article 15(4) of the Constitution is to advance the equality principle by providing protective discrimination in favour of weaker sections so that they may become stronger and be able to compete equally with others more fortunate etc., one cannot ignore the wider interests of society while devising such special provision."

Setting aside the UP Post Graduate Medical Education (Reservation for SC/ST and OBCs) Act and MP Government Order that had lowered the cut-off percentage for these categories of candidates to PG Medical entrance exams, the Bench noted: "It will not be possible for such candidates to fully benefit from the very limited and specialised PG training opportunities which are designed to produce high calibre well-trained professionals for the public". However, the students already admitted to such courses under reserved quotas will not be affected by the judgement nor the existing norms prepared by the Medical Council of India for lowering marks for reserved category for admission to undergraduate courses be disturbed. The Court has directed the Medical Council of India to examine whether minimum qualifying marks for quota candidates can be prescribed at P.G. level.

Barring Mr. Justice S.B. Majumdar, the Bench was of the view that States can not exercise exclusive power to frame rules and regulations concerning education. However, Mr. Justice Majumdar, in his dissent note has said, "The common entrance examination envisaged under the regulations framed by Medical Council of India for PG medical education does not curtail the power of the State authorities, legislative or executive, from fixing suitable minimum qualifying marks differently for general category candidates and for SCs/STs and OBC candidates".

Thus, while the Supreme Court judgement has put a temporary stop on reservation for such super speciality courses, everything depends on the view the Medical Council of India takes finally on this issue. The judgement has however made it clear that there cannot be a "wide disparity" between minimum qualifying marks for the reserved category and general category.

The judgement, though laudable for its emphasis on merit as a sole criterion, may however reopen

the contentious issue of reservations on which there has not been a really genuine consensus all these years.

Not surprisingly, a Samajwadi Party leader has described the verdict as "re-actionary" while a former Chairman of SC/ST Commission has said that "merit alone cannot be the criterion for competition between unequals". On the other hand, BJP's Mr. K.R. Malkani states that "Social justice is important but you need to balance it with competition in today's globalised world." Thus, now when the dust and din of elections is over, there may be once again heated arguments on the issue and no wonder, under compulsive situations, "Shah Bano" may be repeated by Parliament to appease this major chunk of vote bank.

The Kargil War : Impact On The Economy

According to the estimates made by the National Council of Applied Economic Research (NCAER), the Kargil War will have only a limited impact on the Indian economy. The war notwithstanding, the prices will remain stable and the economy is expected to grow at a rate higher than estimated. While the immediate impact of the conflict is likely to be marginal, in the long term, the conflict could have implications for defence expenditure. The additional expenditure brought on by the war could be in the vicinity of Rs. 1,500 crore; but with a budget allocation of Rs. 45,694 crore having already been made for the Defence sector, the additional expenditure is negligible.

Meanwhile, a few days after the war, the Reserve Bank of India made a loose estimate that the Kargil conflict could push up government's non-developmental expenditure by Rs. 8,000 crore this year. If there is a single, but momentous lesson, the Kargil War has taught, is that we cannot take our defence preparedness for granted. If Siachen which is held by a brigade, alone costs Rs. 1.5 to 2 crore per day, the cost of garrisoning the entire 140 km Line of Control in Kargil, which would require at least four brigades, will be at least four times high. Defending the country would thus cost a lot and we may have to do it every year.

We may have to modernise our Army, Navy and Air Force, and any endeavour to scale down our expenditure in this sector would amount to playing with fire. The entire defence strategy in terms of preventing "future Kargils" has to be re-oriented if we want to reduce the number of casualties on our side. In a span of a decade the share of defence in our GDP has come down sharply from 3.5 to 2.24 per cent.

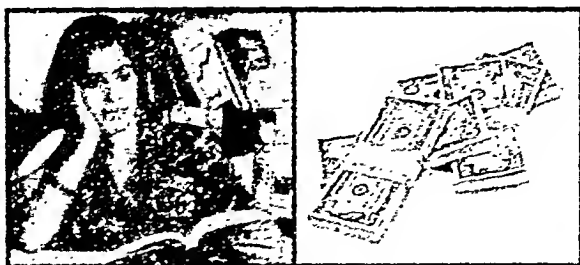
Operation Vijay

On the sixth day of the launching of Operation Vijay to flush out infiltrators from the Drass-Kargil-Batalik sector in the Kashmir Valley, the Prime Minister, Mr. Atal Behari Vajpayee admitted in New Delhi on May 31, 1999 that a war-like situation had developed on that front—something like what had begun 52 years ago. Pakistan had sent in infiltrators assisted by their soldiers to occupy Jammu & Kashmir for the first time just after Independence in 1947. Then, a second time in 1965, they had unleashed intruders into the Valley as part of Operation Gibraltar, leading to the second Indo-Pak War. Next, consistent infiltration since 1989 with hundreds of armed Pakistani-armed militants regularly crossing different positions on the Line of Control (LoC) to spread mayhem like an epidemic in the State gave rise to militancy there. This time, a thousand Pakistani infiltrators had made a home of the Kargil hills before India realised that we had a virtual war on our hands. This time, the infiltrators had breached the LoC and perched themselves on strategic heights up to six to seven kilometres inside Indian territory.

It was on May 6, 1999 that an Indian Army patrol first discovered intruders in the Batalik sector and the army actually realised the gravity of larger Pak game plan. By May 10-14, 1999, the Pakistani intruders were well into the Drass, Kaksar, Mashkoh and Batalik sectors, dangerously threatening the strategically crucial Srinagar-Leh highway—the virtual line of communication to Ladakh as also to Slachen. On May 16, in a major counter-insurgency operation, the Army succeeded in forcing Pakistan-backed infiltrators to flee from one of the ridgelines in the Kargil area in the north of the State and were in the process of clearing rest of the militants from the Drass and Kargil sectors of north Ladakh. Reinforcement were rushed from the 15th Corps (stationed in Srinagar) to the affected areas.

As the area could not be fully cleared of the infiltrators, the Indian Air Force planes went into action on May 26, 1999 to strike at the Pakistani infiltrators entrenched on the strategic heights of the Kargil area. The action, as emphasised time and again, was well within the Indian side of the Line of Control. "This is the start of the operations and these would continue till our defence forces occupy our territory," an official statement said, adding, "Any escalation of this conflict will be entirely the responsibility of Pakistan." Pakistan's then Prime Minister, Mr. Nawaz Sharif was reported as saying that "a war on the sub-continent could not be ruled out". This was later retracted by the then Pakistani Information Minister, Mr. Mushahid Hussain. But after a fortnight of launching its operations in the

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tor, the Indian troops were prepared for a long ul to evacuate the infiltrators. India took a firm sition that there was no compromise on the trusion on the LoC, which the then Pakistani reign Minister Sartaj Aziz said was "not properly marcatcd". Pakistan's efforts to internationalise issue also came to nought as the United States refused to intervene in the matter and advised Pakistan to vacate its illegal occupation of the Kargil sector by its infiltrators and foot soldiers. US President, Mr. Bill Clinton wrote to Mr. Nawaz Sharif under June 4, 1999 echoing the Indian stand on the sanctity of the LoC. He emphasised in his communication that the ongoing standoff between India and Pakistan needed to be defused and respect for the Line of Control was essential.

The US Ambassador to India, Mr. Richard Celeste also hoped that "as quickly as possible the intruders would be withdrawn and the military action could be scaled back... We know the Government of India is working very hard under tough circumstances, to make sure that doesn't happen." Russia also called for restoration of "status quo" in the LoC and said New Delhi's military action in the Kargil sector was "fully in accordance" with India's sovereign right to defend its territorial integrity.

As Islamabad made the usual war cries, the IAF, assisted by the ground troops, went ahead with Operation Vijay and in the first three days about 400 infiltrators were flushed out of the Indian territory. India firmly rejected the offer of a third-party mediation by the UN Secretary-General, Mr. Kofi Annan. Initially, India dismissed fears of a warlike situation, while emphasising that its sole concern was to clear the Indian territory of intruders. Treating the operations as a localised affair, the official rationale for the recourse to air strikes contained four points:

- (i) any delay would have encouraged Pakistan to extend its operations, calling for a more severe response;
- (ii) non-eviction of infiltrators would have changed the alignment of the LoC to India's disadvantage;
- (iii) the security of the vital Srinagar-Leh road would have been threatened, and
- (iv) continued occupation of the heights would have led to further infiltration.

Pakistan's response was to send its Foreign Minister for talks to New Delhi, but the Prime Minister, Mr. Atal Behari Vajpayee accepted the offer only on May 31 for talks aimed at defusing the tension on the border, saying, "It would be better if Pakistan called back the infiltrators."

As the infiltrators (firmly established as a Pak Army-Taliban nexus) were on the run and Operation

Vijay intensified on the sixth day of action with air raids continued overnight with French-made Mirage 2000 aircraft being deployed for reconnaissance and jamming radars set up by the infiltrators. The intruders were being isolated with the Indian Army re-establishing its authority up to the LoC in Mushkoh Valley including capture of strategic Tiger Hill and other key features over-looking Srinagar-Leh Highway. It was on July 4 that the Tiger Hills, was recaptured by the Indian Forces. Mainly due to aggressive offensive of Indian forces and partly under US pressure, Pakistan agreed to withdraw its forces from the Indian side of the Line of Control (LoC) while it had to be satisfied with an American assurance "in encouraging an expeditious resumption and intensification" of bilateral dialogue between India and Pakistan once the sanctity of the LoC has been restored. A joint statement issued in Washington at the end of a prolonged meeting between President Bill Clinton and the Pakistani Prime Minister, Nawaz Sharif on July 4, 1999, made it clear that "concrete steps will be taken for the restoration of the LoC in accordance with the Shimla Agreement". Ultimately, Pakistan virtually withdrew all its forces from the Indian side of LoC on July 14, 1999.

War Over, But Militancy On

After suffering a humiliating defeat and international condemnation in its misadventure in the recent Kargil conflict, Pakistan has reverted to its old game-plan of proxy war in Jammu & Kashmir accentuating it, this time, with an open confrontation with Indian military and para-military forces targeting their residential complexes even at unearthly hours.

Earlier, continuing attacks for the sixth time, the militants attacked an army camp with rockets and gunfire at 3.45 am killing one JCO and one soldier of 34 Rashtriya Rifles' Camp in Beerwa in Budgam district in Jammu Kashmir on August 12.

It was the darkness before dawn on August 7, 1999 when the world was fast asleep including the camp of 4 Rashtriya Rifles, a post manned by 100 personnel in Natnusa village in Kupwara district of Jammu and Kashmir. What is called the most auspicious time before daybreak was used by evil men to strike terror in the village. Around 25 to 30 militants belonging to the Harkat-ul-Ansar and Hizb-ul-Mujahideen found it as the most appropriate time to attack the military camp, with their light machine guns and sophisticated weapons. It was a close encounter between our army men and the militants, and when all was over, one could count the casualties as five army men, including an officer, and six extremists as dead and ten soldiers wounded.

The undeclared war in Kargil may be over, despite the occasional shellings, but the militant violence supported by Pakistan with the aid of foreign mercenaries, has gained punch all through the course of the Kargil War and thereafter. A frustrated Pakistan, smarting under the discomfiture suffered in the Kargil War has committed a series of terrorist attacks and is likely to commit more. Earlier on July 13, 1999, militants stormed the Bandipur BSF residential complex and gunned down a DIG and two others and took hostage two families of the BSF personnel. However, in a pre-dawn operation the next day, the National Security Guard, rescued all the 12 hostages and killed one of the militants belonging to the Al-Badr outfit.

According to the findings of the Union Government which has submitted a report to the National Human Rights Commission (NHRC), in a span of a decade the Pakistan-supported terrorists or militants have killed more than 16,850 innocent people, 352 government officers, 125 politicians, including 15 senior leaders, 10 members of the judiciary and an equal number of journalists. Militants also kidnapped 2,491 people, including 20 foreigners and 135 women. While 809 were released, in most cases after extortion, torture and exchange of militants, 1,036 were brutally killed. On the other hand, around 7,687 militants including 563 foreign mercenaries were killed by the law enforcement agencies between 1988 and 1997 when terrorism was at its zenith.

The so-called proxy war that has been dragging on for more than a decade in Jammu and Kashmir has claimed more lives than the Kargil War; the encounter with the terrorists has claimed the lives of over 1,400 security personnel. Apart from the massive damage to property—destruction of 1,264 government buildings, 758 educational institutions, 9309 private houses, 1659 shops, 243 bridges and nine hospitals—the militants forced 49,000 Hindu and Sikh families to migrate from the Kashmir Valley. Several Muslim families also left the valley on grounds of insecurity. Militants did not spare even places of worship and destroyed 93 temples, 27 mosques and two gurdwaras. The Pandits were "targeted" as part of a design to communalise the State, although the militants had shown no regard for any community as all of them suffered at the hands of militants.

Pakistan's great ally, USA itself now admits that "militant groups, with leaders and infrastructure in Pakistan, were among those connected with the killings" of innocent civilians in Kashmir. The State Department spokesman, Mr. James Rubin said on July 22, 1999: "We have ... identified one such group, the Harkat-ul-Ansar, a terrorist organisation about two years ago. We call on the Government

of Pakistan, and all others with influence on these groups, to press toward restraint." Mr. Rubin was reacting to the killings of fifteen villagers in the Doda district of Kashmir just a few days before.

Undaunted by the rising wave of terrorism in Jammu and Kashmir, both the Union Government and the State Government are determined to fight the proxy war with all the resources at their command. According to Mr. T.R. Kakkar, Special Secretary (Jammu and Kashmir) in the Union Home Ministry, there will be 1,000 more VDCs in the Jammu region, all equipped with automatic weapons. Reliable sources say that nearly 90 training camps for the Kashmiri militants are being operated in PoK out of which 10 are in Muzaffarabad. There are training camps in Afghanistan too while Sialkot in Pakistan grows saboteurs trained in handling explosives, time devices and sophisticated weapons.

India has mooted a fundamental question viz Pakistan: Can there be any bilateral talks so long as the proxy war is on?

Vajpayee's Bus Diplomacy

The Prime Minister, Mr. Atal Behari Vajpayee lived up to his role as a statesman bridging barriers with élan—exuding spontaneous warmth and cordiality—during his televised bus trip to Pakistan on February 20, 1999 despite news of the Jammu massacres, a bandh in Lahore, even acrimony at the Eden Gardens in Calcutta. India successfully pulled off a media coup with the Prime Minister convincingly conveying the twin messages—making a new beginning with a traditional enemy, and the Indians reaching out to their Pakistani brethren despite the bitterness of decades.

Mr. Vajpayee's initiative of driving from Amritsar across to the Wagah border to Pakistan had ushered in a new era in Indo-Pak relations. There may not be an immediate breakthrough, but the common people on both sides of the Radcliffe Line were convinced that a serious attempt was being made by both the leaders against all odds. Ever since the Partition of 1947, the Prime Ministers of both India and Pakistan must have met any number of times either in New Delhi or Islamabad or venues outside the sub-continent, but the tryst made with history on February 20, 1999 in Lahore has no parallel. First, only 11 months earlier both had gone nuclear with such hype that the rest of the world feared that another war between the two hostile neighbours was imminent and many advanced nations had slapped sanctions on both New Delhi and Islamabad.

Mr. Vajpayee and Mr. Sharif signed the next day the epoch-making Lahore Declaration that

committed both sides to take immediate steps to reduce the risk of nuclear accidents and unauthorised use of nuclear weapons. Both the countries had also undertaken to provide each other with advance notification in respect of their ballistic missile flight tests. They had also undertaken to work out the technical details of the nuclear-related CBMs (Confidence-Building Measures) soon. But Kargil back-stabbing by Pakistan ended the goodwill generated by this bus diplomacy.

From Calcutta To Dhaka By Bus

Even as the guns were booming in the Kargil sector and as the Indian soldiers and the Pakistani intruders were locked in deadly combat, the Prime Minister, Mr. Atal Behari Vajpayee, took time off to forge new ties with our neighbour, Bangladesh. Together with the Bangladesh Prime Minister, Ms. Sheikh Hasina Wajed, he received the inaugural Calcutta-Dhaka bus at Osmani Memorial Hall in Dhaka on June 19, 1999. Also present on the grand occasion were the External Affairs Minister, Mr. Jaswant Singh, the then Minister for Railways and Surface Transport, Mr. Nitish Kumar and the Chief Minister of West Bengal, Mr. Jyoti Basu.

On June 17, 1999 Bangladesh and India signed an agreement to introduce a direct bus service between Dhaka and Calcutta. Under the agreement two buses from Dhaka and two from Calcutta will operate in the Dhaka-Benapoli-Calcutta route everyday except Sunday. Meanwhile, train services between Bangladesh (Jessore) and India (Benapoli) were also resumed on November 12, 1999.

India's Space Hat-Trick

India crossed an important milestone on May 26, 1999 when the Indian Space Research Organisation (ISRO) successfully put into orbit three satellites—an Indian remote sensing satellite and German and a Korean satellite—using its latest hi-tech vehicle, PSLV-C2. The launch was carried out from the arid SHAR Centre at Srihankota, about 100 km from Chennai.

The majestic, four-stage 44.4-metre-tall PSLV-C2, with a lift-off weight of 294 tonnes soared into the sky from Srihankota with a spectacular and successful first-ever multiple launch carrying three satellites—the indigenous 1050 kg Ocean Remote Sensing Satellite (IRS-P4), the 45-kg German Tubsat and the 107-kg South Korean KITSAT-3 in the near-circular polar sun synchronous orbit at an altitude of 727 km, proclaiming to the world India's capability to provide launch services to foreign satellites commercially. In the process, the ISRO

netted \$ 1 million from the launch, almost recovering the entire cost (Rs. 48 crore) of the IRS-P4 Oceansat. India thus entered the \$10-billion space commerce market.

It is the country's first satellite dedicated to ocean studies including information on chlorophyll distribution to identify potential fishing zones and study of coastal areas, sea surface temperature, liquid water contents and water vapour in the atmosphere above oceans. Encouraged by this initial success, the ISRO is planning a more advanced version of the Oceansat satellite.

The German Tubsat, a joint project of DLR Institute of Space Sensor Technology and the Technical University of Berlin, will be mainly used to carry out tests involving three-axes attitude control and to qualify different sub-systems related to Earth observations, while South Korea's KITSAT-3 is an engineering test satellite. Its main purpose is to develop different technologies for high performance micro-satellites and qualify them in the low-earth orbit space environment.

The same day, a naval version of the *Trishul* missile was also successfully flight-tested at the Dronacharya Naval Base in Kochi. The missile was tested in guidance mode as an anti-sea-skimmer against low-altitude targets, according to a Defence Ministry spokesman. The objects of the test-flight were met as it marked a step towards evaluation and induction of the missile in the Navy by the year 2000.

New Monetary, Credit Policy

The Reserve Bank of India (RBI), in its Monetary and Credit Policy for 1999-2000, announced a cut in the Cash Reserve Ratio (CRR) by 0.5% to 10% with effect from May 8, 1999. This would release Rs. 3,250 crore to the banking system.

The RBI also decided to accord priority sector status to investments by banks in venture capital. Such investments would fall outside the overall ceiling of 5% of their incremental deposits for investment by banks in shares, corporate debentures and mutual fund units. Incremental credit given to NBFCs by banks for on-lending small road and water transport operators and to units in tiny sector of industry would also qualify for priority sector status. The RBI would also introduce a calendar for issue of Treasury Bills for the entire year and 182-day Treasury Bill would be issued every fortnight.

Announcing a series of measures in Mumbai on April 20, 1999 to improve the flow of credit to industry, the RBI Governor, Dr. Bimal Jalan announced a fixed rate of interest for project finance and also introduced term-linked Prime Lending

Rates for different maturities. According to Dr. Jalan, "The first priority in the current year is to facilitate the flow of credit to the commercial sector." Setting out the other priorities, he said, "RBI's formulations are in the direction of lowering interest rates, continuing the process of strengthening the financial sector and developing different markets for money, debt and Government securities to make these markets more liquid."

Banks have been provided with the freedom to operate different Prime Lending Rates (PLRs) for different maturities and provided the transparency and uniformity of treatment originally envisaged and maintained. Similarly, the banks have been permitted to offer fixed rate loans subject to conformity to Asset Liability Management (ALM) guidelines.

The highlights of the policy are :

- Cash reserve ratio cut from 10.5% to 10% from May 8.
- Prime Lending Rates for different maturities.
- Fixed-rate loans for project finance term loans.
- Advances against fixed deposits without reference to PLR ceiling.
- Two-year waiting period for rescheduled loan agreements reduced to one year.
- General reliance facility withdrawn and replaced with a collateralised lending facility.
- To improve transmission mechanism, UTI, IDBI and other money market players allowed to access short term liquidity through repos.
- Introduction of annual calendar for issue of Treasury Bills.
- Proposal for issue of new loans on price basis instead of a yield basis.
- Banks, FIs free to sanction term loans for viable projects of both public and private sectors.
- Banks permitted to issue Inter-institutional guarantees.
- Scheme for settlement advisory committee specialised to reduce non-performing assets.
- Special cell in RBI to liaise with NABARD and micro-credit institutions to augment credit flow to self-employed persons and rural areas.
- National Payments Council set up under an RBI Deputy Governor.

Agni-II India Becomes Missile Superpower

India on April 11, 1999 became a nuclear missile power by successfully test-firing the Agni-II Intermediate Range Ballistic Missile (IRBM) with a strike range of 2,500 km. The launch at 9.47 a.m.

from a new test range at Wheeler Island in Orissa's Balasore District, propelled India into an elite club of nations possessing such weapons. The test-firing of the mobile-launcher Agni (codenamed A 201) came exactly 11 months after the Pokhran-II nuclear blasts, making India capable of nuking major cities in China, among others. India had been under considerable pressure from the United States and China to cap the Agni project. The test-firing of April 11 has, therefore, been widely seen as a forceful assertion of India's right to safeguard its national security interests.

"We have reached point of operationalisation of Agni-II as a weapons system," said the Defence Minister, Mr. George Fernandes. This, according to analysts, means that Agni-II is now ready for production and that no more tests are needed. Agni-II had a "perfect launch". The two-stage missile, carrying a substantial payload, reached the point of impact in 11 minutes.

The salient features of the test-firing of Agni-II were : demonstration of mobile launch capability; solid-state propulsion system; range in excess of 2,000 km; features designed to carry special payload; state-of-the-art navigation, guidance and control systems and sophisticated on-board packages including advanced communication interface. The most significant aspect of the test-firing was the usage of solid fuel as a propellant. The fuel reduces the time for preparation of the launch and has logistical advantages such as a longer shelf-life, besides being compact and non-corrosive. The missile is equipped with Global Positioning System (GPS) in order to improve its accuracy or reduce the circular error of probability in military parlance. This means that the missile's on-board computer during its flight gets inputs from the satellites to home in on the designated target.

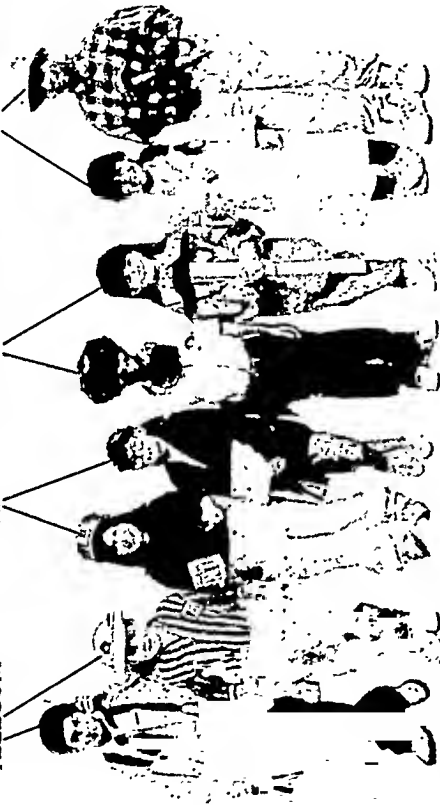
India gave Pakistan and other countries a day's notice about the event in accordance with the Lahore Declaration. International warning to prevent any aircraft or ship from coming near the "splashdown" area in Bay of Bengal was also issued. It is understood that the United States was already aware of New Delhi's intentions to test-fire Agni-II on April 11, 1999. Yet, the US regretted the test and sought tangible indications that India would "practise restraint". Pakistan promised a tit-for-tat approach. Britain, and Japan saw it as a new threat to regional stability while Russia pointed out that Agni-II is an important component in India's nuclear deterrence force for self-defence. The test-firing, which was widely welcomed throughout the country, was "purely defensive" and it strongly reiterated India's commitment to minimum nuclear deterrence. no-first-use of nuclear weapons and non-use against non-nuclear weapon States.

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B.T.	Bachelor of Science in Bio Technology	3 Years	Pass in Pre-Degree, 10+2 or equivalent with Science group.
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B.Sc.	Bachelor of Science in Nursing	4 Years	Pass in Pre-Degree, 10+2 or equivalent with 45% marks in Science group in (PCMB)
B.P.T.	Bachelor of Science in Physiotherapy	4 Years	Pass in Pre-Degree, 10+2 or equivalent with 45% marks in Science group in (PCMB)
G.N.M.	Diploma In General Nursing & Midwifery	3 Years	Pass in Pre-Degree, 10+2 V.H.Sc. any group

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INSAT-2E

India's INSAT-2E, multipurpose communications satellite, was successfully launched in the early hours of April 3, 1999 from the Kourou space station in French Guyana. It marked a new milestone for the Indian Space Research Organisation (ISRO).

A European Ariane 42P rocket carrying the 2,250-kg satellite, last of the INSAT-2 series, blasted off from the launch pad of the Centre Spatial Guyanais at Kourou at 3.30 a.m. (IST) with a roar and a golden glow that lighted up the entire area. The rocket, with two solid-propellant strap-on boosters, put the satellite into its geo-stationary transfer orbit 22 minutes after launch. Six minutes later, the Master Control Facility at Hassan, 180 km from Bangalore, took control of the satellite. The satellite is being tracked, apart from MFG, Hassan, by INTELSAT organisation's ground stations at Perth (Australia), Fucino (Italy) and Lake Cowichan (Canada). According to a beaming ISRO chief, Dr. K. Kasturirangan, "Everything went as per the plan. We have received first signals from the satellite at our Hassan centre. INSAT-2E will significantly augment India's telecommunications and television broadcasting facility."

The satellite would be put through a battery of tests before it is placed in its final orbit, 36,000 km above the Equator. Described as "a textbook launch (that) marks one more step in the space partnership between India and Europe, INSAT-2E has been built at a cost of Rs. 220 crore. It has 17 C-band transponders which can be used in telecommunications, television broadcasting and meteorological services. INSAT-2E is particularly important because it represents the ISRO's first attempt to make an international impact in the field of communication satellites, with half the satellite's capacity leased to INTELSAT. The first operational communication satellites to be built in the country, the INSAT-2s represent a quantum jump in capacity over the US-built INSAT-1 satellites. The launch of INSAT-2E has put India in an exclusive club of advanced nations in commercialisation of communication payload.

With orbit-raising and deployment operations having been completed, payload-related activities on INSAT-2E have been started with the switching on of the very high resolution radiometer meant for meteorological imaging on April 15, 1999.

New Telecom Policy

The Union Cabinet has decided to allow uplinking facility to all future Indian broadcasters and approved amendments to the Cable Television Act to make it mandatory for all foreign TV channels to follow a programme and advertising code. The

New Telecom Policy (NTP), approved on March 26, 1999, is based on the principle of revenue-sharing and the reference of the Issue of existing cellular and basic operators to the Attorney-General for advice. According to the Information and Broadcasting Minister, the amendments to the Cable TV Networks Regulation Act, 1995 would also make it compulsory for all cable operators to telecast DD-I and DD-II through satellite link and on a particular band to ensure clear reception.

- Telephone-on-demand by 2002.
- Instead of the current two telephone-owners per 100 Indians, there will be seven per hundred by 2005 and 15 by 2010. Rural teledensity to go up from 0.4 telephones to four per hundred by 2010.
- National long-distance telecom services to be opened up to private operators from January 1, 2000.
- DoT-MTNL to be the third cellular phone operator in each circle.
- Attorney-General to advise how the existing private operators in basic and cellular services can move to the new revenue-sharing regime that is to replace one-time licence fee.
- TRAI to arbitrate disputes between the Government and any licensees.
- TRAI recommendations to be sought by the Government on the issue of new licences.
- TRAI may not be assigned the function of licensor or policy maker. Such functions to be retained by the Government.
- It will not be mandatory for the Government to seek TRAI's recommendations.

Revised Exim Policy

The Revised Exim Policy for 1999-2000 was introduced on March 31, 1999. The Government put 894 additional items on the free import list and another 414 under the Special Import Licence (SIL). Announcing the Policy the Commerce Minister said in New Delhi on March 31, 1999 that the import liberalisation measures would help the country meet its commitments to the World Trade Organisation (WTO). Breaking from past practice, the revised Exim Policy has not set an annual target for exports in the revised policy. The Commerce Minister justified the commission by citing "last year's experience"; export performance during 1998-99 fiscal year, which could raise apprehensions of an even wider trade gap next year.

The Exim Policy announced a clutch of measures to boost India's sagging exports. Most incentives are aimed at de-bureaucratising export procedures. A number of first-time measures to cut transaction costs for exporters has been announced. These include electronic filing of applications for

issue of advance licences and enabling exporters to fill applications electronically and receive the response through E-mail. Other first-time measures include benefit of special SiL to promote branded products, free trade zones without value-addition and export obligation. The free trade zones are permitted to carry out manufacturing or trading activities. Not only will these areas not be subjected to predetermined value-addition, export-import obligation and input-output wastage norms, the stringent labour laws may not be applicable, said the Commerce Minister. All this would provide greater operational freedom in export activity, he added. Moreover, these areas would be treated as outside the customs territory, with officers manning only the entry and exit points. Sale in the Domestic Tariff Area (DTA) would be permitted for the free trade zones on payment of full customs duty.

Sino-Indian Relations : Yet Another Dialogue

If 1998 had struck a sour note in the relations between India and China in the wake of Pokhran II, the two countries made a conscious effort to open a new leaf in June 1999. It all began with the visit of India's External Affairs Minister, Mr. Jaswant Singh, to Beijing around the middle of June 1999. Recalling the efforts of India and China in developing *Panchsheel* or the five principles of peaceful co-existence in the 1950s, Mr. Jaswant Singh said that there was no older and surer code of conduct for international relations other than *Panchsheel*.

Calling for greater democratisation of the world order, the Indian External Affairs Minister said that "multipolarity should become our creed at a time when unipolarity is being perpetuated. We should be able to contribute to the definition of a new vision for a new millennium ..."

In Beijing, the External Affairs Minister had meetings with the Chinese Foreign Minister, Mr. Tang Jiaxuan and the Chinese Prime Minister, Mr. Zhu Rongji.

The Chinese decision to have a "security dialogue" augurs well for confidence building measures between India and China. A security dialogue would mean a move to settle differences on the Line of Actual Control (LAC) between India and China. Mr. Jaswant Singh's China visit did succeed in the revival of the work of the Joint Working Group. During the 7th meeting of the Sino-Indian Expert Group held in New Delhi on November 24, 1999, both sides discussed possible recommendations to settle their over three-

decade-old territorial dispute. The Expert Group's recommendations will be submitted to Sino-Indian Joint Working (JWG) which is expected to hold its 12th meeting in 2000 in New Delhi.

Once the relations between India and China become normal, the two countries stand to gain a lot by getting closer on such fronts as trade relations and cultural contacts. And both need to forge a common front against the bullying behaviour of a unipolar world as also rising ebb of Pak-backed fundamentalism which is rearing its head in China too in its Muslim-majority Xinjiang province.

Tercentenary Celebrations Of The Khalsa

In an atmosphere suffused with Sikh religious symbolism and fervour, the Khalsa Tercentenary Celebrations got off to a high-profile start at Anandpur Sahib (Punjab) on April 8, 1999. The Prime Minister, Mr. Atal Behari Vajpayee and the Punjab Chief Minister, Mr. Parkash Singh Badal reminded the massive rural Punjabi gathering of the internal strife undergone by the State in the not-so-distant past and urged them to move on to the path of development.

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The epochal event was, however, marred by petty squabbling and infighting in the Shiromani Akali Dal (SAD) and the Shri Gurudwara Prabandhak Committee (SGPC). Mr. Gurcharan Singh Tohra, SGPC President for a record 25 years, resigned and Bibi Jagir Kaur was installed as SGPC President—the first woman to hold the post—in March 1999 (Mr. Tohra floated his rival Sarbhind Akali Dal to oppose SAD). And he did succeed in humiliating SAD in the 1999 Lok Sabha elections. With militancy and extremism becoming things of the past and the State back on the rails under SAD leadership with Mr. Parkash Singh Badal as Chief Minister, this valiant, outgoing, fiercely individualistic and enterprising community went all out to make the Tercentenary Celebrations of the *Khalsa* a resounding success.

Ninth Five-Year Plan Approved

The 48th meeting of the National Development Council in New Delhi approved the much-delayed Ninth Five-Year Plan (1997-2002) on February 19, 1999. It envisages a growth rate of 6.5% per annum from the earlier projection of 7% in the face of economic slow down. Though delayed by two years, the Plan will run its period through to 2001-2002. One major highlight of the Plan is that the gross budgetary support of Rs. 3,74,000 crore contains a provision of Rs. 21,946 crore for a Special Action Plan (SAP) of the Prime Minister. The SAP will lay emphasis on five areas : food and agriculture, physical infrastructure, health, education, housing and drinking water, information technology and water resources.

In view of the differing perceptions among the States on the criteria for allocation of Central funds for major rural poverty alleviation programmes, the Prime Minister, Mr. Atal Behari Vajpayee announced the constitution of an expert committee to look into this aspect. Another expert committee would look into the matter of transfer of Centrally-sponsored

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State Funding Of Elections

The report of all-party Committee on State Funding of Elections justified State funding of elections, saying it is legal, constitutional and in public interest. The eight-member Committee, set up in May 22, 1998 under the Chairmanship of the former Union Home Minister, Mr. Indrajit Gupta, submitted its report to the Union Home Minister, Mr. L.K. Advani on January 14, 1999. Mr. Advani said : "This is a unanimous report and it should be possible to legislate on the basis of this report."

Mr. Gupta was of the opinion that, to strengthen the democratic roots, the Government should help in the State funding of elections. He added : "It will also help in removing corruption and black money and other malpractices from elections."

The Committee suggested creation of a separate election fund for meeting the expenses on State funding of elections. "To begin with, the Central Government may contribute Rs. 600 crore annually, at the rate of Rs. 10 per elector for the total electorate of sixty crore in the country, towards the corpus of the fund. The State Governments may also contribute proportionately a matching amount of Rs. 600 crore annually in accordance with the present financial arrangement between the Centre and the States whereby all capital expenses on election items are shared by them on 50:50 basis," the report said.

As a first step towards State funding of elections, the Committee has suggested the grant of a number of facilities, such as the allotment of the rent-free telephone to the recognised National and State parties, sufficient free air time on Doordarshan and AIR, including the provision for such benefits through other private channels, including cable operators, specified quantity of petrol or diesel, paper for the printing of election literature, postage stamps, five copies of the electoral rolls for each constituency besides refreshments and food packets for the counting agents.

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Mr. Gupta was of the opinion that, to strengthen the democratic roots, the Government should help in the State funding of elections. He added: "It will also help in removing corruption and black money and other malpractices from elections."

The Committee suggested creation of a separate election fund for meeting the expenses on State funding of elections. "To begin with, the Central Government may contribute Rs. 600 crore annually, at the rate of Rs. 10 per elector for the total electorate of sixty crore in the country, towards the corpus of the fund. The State Governments may also contribute proportionately a matching amount of Rs. 600 crore annually in accordance with the present financial arrangement between the Centre and the States whereby all capital expenses on election items are shared by them on 50:50 basis," the report said.

As a first step towards State funding of elections, the Committee has suggested the grant of a number of facilities, such as the allotment of the rent-free telephone to the recognised National and State parties, sufficient free air time on Doordarshan and AIR, including the provision for such benefits through other private channels, including cable operators, specified quantity of petrol or diesel, paper for the printing of election literature, postage stamps, live copies of the electoral rolls for each constituency besides refreshments and food packets for the counting agents.

Diary Of Events — NATIONAL

JANUARY 1999

- 2 : India makes first cryogenic tunnel-on-wheels.
- ★ As part of the ambitious National Integrated Highway Project (13000 km) linking Kashmir to Kanyakumari and Saurashtra to Silchar, Prime Minister lays the foundation stone for a six-lane carriageway of Bangalore-Hosur section at Singa Sandra, 15 km from Bangalore.
- 3 : India emerges the leader among developing countries in the wind industry with over 900 megawatts of wind power, as per the latest report of the World Watch Institute.
- 4 : Union Government enhances the customs duty on gold by 60% to Rs. 400 per 10 gram to mop up Rs. 250 crore as additional revenue.
- 7 : President promulgates an Ordinance seeking to revive the Prasar Bharati Act of 1990.
- 8 : Mr. R.S. Paroda, Director-General, ICAR, elected the next President of Indian Science Congress.
- ★ The first "dry run" of Delhi-Lahore bus service completed. The 650-km journey covered in 14 hours.
- 9 : Government slashes the Ninth Five-Year Plan (1997-2002) by Rs. 16,000 crore by reducing the public sector outlay, but decides to retain the gross budgetary support of Rs. 3,74,000 crore to attain an aggregate growth of 6.5 per cent. The over-all outlay of Plan is now Rs. 859,000 crore, as against Rs. 875,000 crore earlier.
- 11 : President promulgates an Ordinance repealing the Urban Land (Ceiling and Regulation) Act 1976. Some 2 lakh hectares of land is likely to be released for building activity by the private sector.
- 14 : The Committee on State Funding of Elections headed by former Home Minister, Mr. Indrajit Gupta recommends creation of a separate election fund (Rs. 1200 crores; to begin with) with equal contributions from the Centre and the State Governments.
- 16 : In the Palmolive Femina Miss India Contest in Pune, Miss Gul Panag of Delhi is adjudged Femina Miss India-Universe 1999, and Miss Yukta Mookhey and Miss Shrivangi Parikh, both from Mumbai, are Miss India-World and Miss India-Asia Pacific respectively.
- 18 : Nobel Laureate, Prof. Amartya Sen awarded Bharat Ratna, India's highest civilian honour.

20 : In a landmark judgement, Supreme Court rules that each incident of sexual harassment at the workplace is a violation of Fundamental Rights.

21 : National Sample Survey claims a 2% annual literacy growth rate projecting the 1996 literacy percentage at 64% in comparison to 54% as per 1991 census.

22 : Government announces Samman Awards to tax-payers having a declared income of Rs. 20 lakh or more in four out of five immediately preceding years.

24 : Government announces awards worth Rs. 10 lakh each for research to the scientific teams of *Prihvi* Missile System, Tempest Integrated Airborne Electronic Warfare System and Academic Excellence System.

30 : Sitar maestro, Pandit Ravi Shankar and former Chief Minister of Assam, Gopinath Bardoloi (posthumously) conferred Bharat Ratna.

FEBRUARY 1999

1 : India and Russia sign MoU for taking up joint technology projects in the fields of deep sea exploration and exploitation.

★ Huge reserves of natural gas capable of generating 2,680 megawatt power annually for 30 years discovered in Barmer District of Rajasthan.

2 : Government garners Rs. 2,000 crore from the *Kar Vivad Samadhan Scheme (KVSS)* through 66,000 declarations for an amount of Rs. 4,900 crore.

4 : Former Defence Minister, Mr. K.C. Pant appointed Vice-Chairman of Planning Commission.

★ World Bank sanctions a loan of Rs. 2172.8 crore (including IDA component of Rs. 967.6 crore) for a Rs. 3,320 crore economic restructuring project in Andhra Pradesh—the first major development project for India in the post-Pokharan period.

5 : India's software exports during 1998 record a growth of 68% in rupee terms and 52% in dollar terms to Rs. 9,500 crore against Rs. 5,640 crore in 1997.

★ Dr. Shankha Ghosh chosen for K.K. Birla Saraswati Samman 1998 for his collection of Bangla poetry, titled *Gandharba Kabitagucca*.

10 : President's Rule imposed in Goa.

13 : President confers Gandhi Peace Prize, carrying a cash award of Rs. 1 crore, on Ramakrishna Mission.

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19: National Development Council (NDC) endorses the draft of the Ninth Five-Year Plan (1997-2002), which is two years behind schedule.

20: Prime Minister undertakes the historic bus journey to Lahore in a bid to ease tensions between India and Pakistan.

21: Lahore Declaration on confidence-building measures between India and Pakistan signed.

★ The biggest blockbuster *Kuch Kuch Hota Hai* bags four top honours—best film, best actor, best actress and best director in the 44th Filmfare Awards function. The best actor and best actress awards given to Shahrukh Khan and Kajol respectively while Karan Johar bags the best director award for the film. Director Shekhar Kapoor whose *Elizabeth* is making waves is presented a special Filmfare Award.

22: A 14-year-old boy Govind Jajoo from Jaipur becomes the youngest Microsoft Certified Professional (MCP) in the country after clearing the tough examination conducted by the International software company with 87.2 per cent marks.

23: Swami Vivekananda's 106-year-old rare letters written to the then ruler of Khetri found in Jhunjhunu, Rajasthan.

27: Budget for 1999-2000 presented. A 10 per cent Income-Tax surcharge to raise Rs. 3,100 crore; other proposals include New Gold Deposit Scheme; Public Sector Undertakings disinvestment to net Rs. 10,000 crore; diesel prices raised by Re. 1 to raise Rs. 5,000 crore; Peak Customs Duty reduced to 40 per cent; Kisan Credit Card for 20 lakh farmers.

MARCH 1999

1: Reserve Bank of India cuts bank rate from 9 per cent to 8 per cent.

4: National Safety Day celebrated.

5: President releases the commemorative stamp on the Golden Jubilee of Press Trust of India.

8: Lok Sabha passes Urban Land (Ceiling and Regulation) Repeal Bill.

13: Patents (Amendment) Bill passed.

16: NSE witnesses a record turnover of Rs. 3181.83 crore in 349,760 trades—the highest since its inception. The previous highest value of trades was Rs. 3142.49 crore recorded on March 10, 1999.

★ Shriromani Gurdwara Prabandhak Committee (SGPC) creates history as State Tourism Minister, Mrs Jagir Kaur is elected the first woman President of SGPC.

17: In a landmark judgement, the Supreme Court quashes the training rules framed by the Bar

Council of India (BCI) for fresh law graduates to undergo one-year training before enrolling with any Bar to practise across the country.

22: India and Russia sign a defence agreement for training Indian specialists in leading Russian military institutions.

23: President confers Padma Vibhushan, Padma Bhushan and Padma Shri awards on fifty-five persons. Among the recipients are Lata Mangeshkar and vocalist Bhimsen Joshi (Padma Vibhushan), Director of Bhabha Atomic Research Centre, Dr. Anil Kakodkar (Padma Bhushan), Sachin Tendulkar and weightlifter Karnam Malleswari (Padma Shri).

25: India relaxes visa curbs for some eminent Pakistanis.

26: New Telecom Policy announced by the Government; private uplinking facility allowed.

27: Kannada playwright and writer-actor Girish Karnad receives the 1998 Jnanpith Award.

★ Newly-constituted *navratna* board of Indian Oil Corporation clears investment proposals worth Rs. 4,000 crore.

29: An earthquake measuring 6.8 on the Richter Scale devastates Chamoli and Rudrapurayag Districts in the Garhwal Division of the UP Hills; Nandprayag town of Chamoli was epicentre of the quake.

30: Union Cabinet bans all State lotteries.

★ RBI simplifies NRI and PIO norms.

31: Government launches Persons of Indian Origin (PIO) card scheme—a step towards dual citizenship for the people of Indian origin settled abroad.

★ Government announces new EXIM policy for 1999-2000 and frees 894 new items from import curbs.

APRIL 1999

3: India's most advanced satellite, INSAT-2E last of the second generation satellites built by ISRO and weighing about 2,550 kg at lift-off and is successfully launched by an Ariane space vehicle at Kourou, French Guyana in South America.

8: Indian Newspaper Society (INS) celebrates Diamond Jubilee in New Delhi.

11: India successfully test-fires the extended range Agni-II Intermediate Range Ballistic Missile (IRBM).

15: INSAT-2E sends its first picture of Earth

16: India successfully experiments its surface-to-air missile *Trishul* on a target *Nishant*, an unmanned air vehicle.

17: Mr. Atal Behari Vajpayee loses vote of confidence in Lok Sabha by a single vote, with 269 in favour and 270 against; submits his resignation

18 : Supreme Court rules that the Press does not have an unfettered right to interview an undertrial prisoner in jail.

20 : Reserve Bank of India (RBI) unveils the new monetary credit policy and announces a half percentage point cut in the Cash Reserve Ratio (CRR) to 10 per cent.

23 : World Book & Copyright Day observed.

26 : President dissolves the 13-month-old 12th Lok Sabha.

MAY 1999

4 : The Chief Election Commissioner, Dr. M.S. Gill announces elections to the 13th Lok Sabha in September/October, 1999.

5 : Goa achieves the distinction of becoming the first State to use the Electronic Voting Machines (EVMs) in all the 40 constituencies during the State Assembly elections to be held on June 4, 1999.

7 : The Supreme Court upholds the validity of the Lotteries (Regulation) Ordinance, 1997 and Lotteries (Regulation) Act, 1998 enabling State Governments to prohibit the sale of lottery tickets of other States in their respective States.

9 : The 136th birth anniversary of Nobel Laureate, poet and philosopher Rabindranath Tagore celebrated.

* Mother's Day celebrated.

11 : Technology Day observed in India to mark the first anniversary of Pokhran II nuclear tests.

16 : The BJP and its allies form National Democratic Alliance (NDA).

17 : The Standing Committee on External Affairs (1998-99) of the 12th Lok Sabha questions the wisdom of maintaining as many as 158 missions abroad.

20 : Mr. Sharad Pawar, Mr. Tanq Anwar and Mr. P.A. Sangma expelled from the primary leadership of the Congress for six years for raising the issue of Mrs. Sonia Gandhi's foreign origin.

26 : Indian Air Force (IAF) begins air strikes to flush out militants from Kargil.

* India launches an indigenous Ocean Remote Sensing Satellite and two foreign ones—Korean and German micro-satellites aboard the Polar Satellite Launch Vehicle (PSLV)-C2 from Sriharikota.

28 : Three Indian mountaineers of the nine-member team of the "Millennium Indian Everest Expedition 1999" led by Ms. Santosh Yadav make history when Kushang Dorji, Sange Sherpa and Amar Prakash scale Mount Everest, from the most difficult Kangshung face in North (Tibet Side).

30 : The Distance Education Programme under the Panchayati Raj Project, produced by Prof. M. Aslam of IGNOU is conferred the International Commonwealth of Learning President's Award.

JUNE 1999

1 : The Cabinet Committee on Economic Affairs (CCEA) approves a proposal for continued implementation of Project Tiger during the Ninth Five-Year Plan at an estimated cost of Rs. 75 crore. The six new tiger reserves planned include three in Madhya Pradesh and one each in Arunachal Pradesh, Karnataka and Maharashtra.

2 : Prime Minister commissions INS Mysore the Navy's second indigenously-built destroyer-class ship, at the Naval Dockyard in Mumbai.

3 : Pakistan releases IAF Flight-Lieutenant K. Nachiketa after eight days of captivity.

5 : World Environment Day celebrated.

7 : World's largest software maker, Microsoft, launches the next generation of the popular office suite products—Office 2000 in New Delhi.

11 : Mr. Rajiv Ratan Shah, Additional Secretary in the Union Information and Broadcasting Ministry, is entrusted the added responsibility of Acting CEO of Prasar Bharati in place of Mr. O.P. Kishorlal who is appointed as Director, Nehru Memorial Museum.

12 : Indo-Pak talks between Foreign Ministers Mr. Jaswant Singh and Mr. Sartaj Aziz fail in New Delhi.

19 : Prime Minister Mr. Atal Behari Vajpayee and his Bangladesh counterpart Ms. Sheikh Hasina Wazed formally receive the People's Bus Souhagya from Calcutta marking the beginning of the Dhaka-Calcutta bus service.

21 : The plan of doing away with New Delhi's sprawling old bungalows known as "Lutyens' Zone" is rejected by the M.M. Buzh Committee on the ground that the plan will destroy the zone's unique character.

* Wipro Chairman Azim Hasham Premji is the richest Indian in the world with an estimated personal worth of \$2.6 billion (Rs. 12,040 crore), according to Forbes magazine survey.

22 : The Indian Space Research Organisation (ISRO) in association with the National Council of Science Museums plans to set up a series of hi-tech space museums to enlighten public on space science and technology in Delhi, Mumbai, Calcutta and Chennai and later on in all the State capitals.

* The Prime Minister, Mr. Atal Behari Vajpayee launches the Rashtriya Krishi Bima Yojana (National Agriculture Insurance Scheme) for farmers.

23 : The Indira Gandhi National Open University (IGNOU) starts on-line educational Master Tutor Website courses.

25 : Ms. Arundhati Roy, the author of the Booker Prize winning novel *The God of Small Things*

donates the entire proceeds (Rs. 15 lakh) of the Prize to the Narmada Bachao Andolan.

26 : Ms. Medha Patkar selected for the M. A. Thomas National Human Rights Award for 1999 for her work in fighting for the right of those displaced due to the construction of the Sardar Sarovar Project.

27 : India makes it amply clear that no proposal regarding safe passage to the Pakistani intruders was discussed with the visiting US State Department official, Mr. Gibson Lanpher.

28 : Indian forces foil Pakistan's game-plan to send intruders through Chorbat La and Turtuk areas by occupying a ridge line in the southern Siachen Glacier. India's commandos take over the Chorbat La killing 15 Pakistan Army soldiers in the action.

30 : Government lifts ban on the Ceislus Corporation of Sweden, manufacturers of Bofors 155 mm Howitzers gun which is playing a vital part in subduing the enemy positions in Kargil.

JULY 1999

2 : Mr. Arun Singh, former Minister of State for Defence in the Rajiv Gandhi Government who had resigned on the Bofors controversy, is appointed as a Special Executive Assistant to the External Affairs Minister, Mr. Jaswant Singh.

3 : India uncovers North Korea's secret help to Pakistan's missile programme with the interception and detention at Kandla port of Malla-bound North Korean ship carrying missile components to Pakistan.

4 : Indian forces recapture the Tiger Hills from the intruders over looking the NH-1A linking Kashmir Valley to Laddakh.

* Mr. Atal Behari Vajpayee declines the US President, Mr. Bill Clinton's invitation to visit the USA in join Shanti-Clinton talks on Kargil issue.

* The world renowned Solar physicist Prof. S.M. Chitre is conferred the M.P. Birla Memorial Award 1999 for exceptional achievements in the fields of Astronomy, Astrophysics, Space Science and allied disciplines.

6 : Government announces major decisions including disinvestment worth Rs. 10,000 crore in the Public Sector Undertakings.

7 : Indian forces make major gains by recapturing the strategic Jubar Hill and Point 4268 in the Kukur Thang area in the Batalik sector.

9 : Indian troops recapture 99 per cent of the heights in the Batalik sector.

11 : The schedule for five-phased general elections to the 13th Lok Sabha is announced by the Election Commission. The elections to the State Assemblies of Andhra Pradesh, Karnataka and Sikkim will also be held simultaneously.

12 : India sets July 16 as deadline for the Pakistani forces to vacate Indian side of the LoC in Kargil sector.

* Kerala High Court bans smoking in public places throughout the State.

* The Jubilee Hero of Hindi Cinema, Rajendra Kumar (72 years) passes away in Mumbai after a brief illness.

14 : In a daring swift operation the commandos of the NSG free the hostages held by the militants in Bandipore; all the militants killed.

15 : Talas conferred the IT Group Title by the Dataquest Survey.

16 : The National Film Awards announced; *Godmother* bags six awards including the Best Actress Award to Shabana Azmi while *Ajay Devgun* shares the Best Actor Award (*Zakhm*) with Mammootty (*Dr. Baba Saheb Ambedkar*).

18 : According to the Chairman of the Ordnance Factory Board, Mr. D. Rajgopal the 155-mm Bofors guns would be manufactured in the Ordnance factories of Kanpur and Jabalpur very soon.

* According to the latest national sample survey, India's literacy rate has shot up to 62 per cent registering an increase of 10 per cent since the last census in 1991.

20 : The Government announces a 10 per cent average hike in the minimum support price of 10 Kharif crops.

21 : The Janata Dal splits—One faction is headed by Mr. Sharad Yadav and the other by Mr. Deve Gowda. Mr. Yadav's faction, Samata Party and Lok Shakti decide to come under one umbrella.

22 : India and Namibia sign two accords—on non-conventional energy resources and operationalisation of an Exim Bank with the extension of a line of credit of \$5 million.

23 : Five Indian students—Arvind Narayanan (Chennai), Rishi Raj (Ranchi) and Vaibhav Vaish (Lucknow) win silver medals while Mandar Joshi (Pune), Abhishek Saha (Calcutta) and Mohit Singh (Delhi) bag Bronze medals at the 40th International Mathematical Olympiad at Bucharest (Romania).

* The Dumada-Ajaisar barren land development project in Ajmer district of Rajasthan selected for the prestigious Indira Priyadarshini Vikshamitra prize by the Union Forests and Environment Ministry.

25 : Unit 1 (210 MW) of the mega 3×210 MW Bakreswar Thermal Power Project in West Bengal commissioned by the Bharat Electricals Ltd., ahead of schedule.

27 : A renowned historian, Dr. Hemu Yadu claims that the 1500-year old statue discovered by an archaeologist, Dr. Vishnu Singh, at Tala village

in Bilaspur district of Madhya Pradesh in 1958, is of Kalpurush.

★ The Election Commission disapproves Government's decision for issuing an ordinance giving Doordarshan exclusive Direct-to-Home (DTH) telecast rights for the next five years.

28 : Shiv Sena Chief Mr. Bal Thackeray stripped of his voting rights and debarred from contesting elections for six years (December 11, 1995 to December 10, 2001).

★ Dr. Varghese Kurien, the father of 'white revolution', selected for the Paulos Mar Gregorios Award for 1999 for his contribution to community-based development and rural development.

AUGUST 1999

1 : Thakurananda Pai (27), a budding artist at Santiniketan, wins for the second time the Elizabeth Green Shields Foundation Award of Canada, for his water colours titled 'Mother and Child', 'Politics' and 'His Master's Door'.

2 : About 300 passengers die in one of the major train accidents when Delhi-bound Brahmaputra Mail collides head-on with Guwahati-bound Awadh-Assam Express at the Gaisal railway station, near New Jalpaiguri in West Bengal.

★ SEBI sets up advisory committee for Mutual Funds to be headed by Mr. B.G. Deshmukh, a former Cabinet Secretary.

★ Government chalks out a plan on a bail-out package of Rs. 1500 crores for three public sector banks—Indian Bank, United Commercial Bank and United Bank of India.

4 : Reliance Petroleum Ltd asks New India Assurance Corporation a whopping Rs. 20,000 crore insurance package for its entire group of companies.

★ India will become the third largest info-tech (IT) market in the Asia-Pacific region (sans Japan) after China and Australia by 2003, spending about \$9 billion, says Dana Anderson, vice-president of International Data Corporation (Asia-Pacific).

6 : The Archaeological Survey of India discovers a Satavahana era Buddhist site at Kanagahalli in Sanali in Gulbarga district of Karnataka.

8 : Ms. Karishma Modi, a student from Ahmedabad, wins the prestigious Diet Coke Femina Look of the Year 1999 title at Oberai in Mumbai.

★ UTI joins hands with an Australian mutual fund to raise \$500 million from overseas markets for investing in various infrastructure projects in India.

9 : Rihand Super Thermal Power Project under NTPC bags the 1998 Safety Award for industrial safety from the British Safety Council.

★ BHEL bags NTPC's Rs. 1300-crore Talcher Plant's boiler contract.

10 : An Indian Air Force's MiGs 21 fighter shoots down an intruding Pakistani Navy Atlantique ATL-1 aircraft for violating Indian airspace in Kori Creek area of Gujarat. 16 personnel aboard the aeroplane also killed.

★ In a landmark judgement, the Supreme Court holds that the relatives of public servants accused of amassing wealth disproportionate to their known sources of income can also be prosecuted under the Prevention of Corruption Act.

11 : An Indian Air Force helicopter carrying journalists to the Kori Creek site in Gujarat is shot at by a surface-to-air missile fired by Pakistani forces. The chopper escapes narrowly.

★ Total solar eclipse, the last of the millennium, witnessed.

12 : India and Vietnam sign an agreement in New Delhi for cooperation in the field of science & technology.

13 : As a goodwill gesture, India offers to release on the occasion of Pakistan's Independence Day eight Pakistani PoWs held in Kargil War.

14 : Captain Vikram (13 J & K Rifles), Lt. Manoj Kumar Panday (1/11 Gorkha Rifles) (both posthumously), Grenadier Yogendra Singh Yadav (18 Grenadiers) and Rifleman Sanjay Kumar (13 J & K Rifles) are honoured with the highest gallantry award *Param Vir Chakra* for displaying valour of the highest order during the Kargil War.

16 : The National Democratic Alliance (NDA) election manifesto (released by Mr. Atal Behari Vajpayee), highlights : Protection of secular values and a federal polity, a moratorium on contentious issue, end of divisiveness, full protection to minorities and introduction of a bill to check foreign-born Indian citizens from holding high offices in the legislature, executive and judiciary.

★ The Group of Ministers (GoM) on Disinvestment approves the disinvestment of the Government-held shares in the Videsh Sanchar Nigam Ltd (VSNL).

17 : India makes public the draft nuclear doctrine for public debate. Maintenance of a credible minimum nuclear deterrence, not to use nuclear weapons first, not to attack non-nuclear countries, to reserve the right to strike back in case of an attack by another nuclear weapon state are the main features of the draft doctrine.

19 : Nobel Laureate Prof. Amartya Sen's dream trust *Pratichi*—for research on primary education launched.

20 : Mr. Sitaram Sharma, Deputy Secretary-General of the World Federation of United Nations

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Association, is conferred the Scholarly Achievement Award for promotion of peace and culture by the Institute of Oriental Philosophy, Japan.

21 : Election Commission bans campaigning and ads on electronic media by parties.

22 : Guru Pankaj Charan Das, exponent of the Odissi dance form, Durlabha Chandra Singh and Manimala Devi, noted stage artists, and Pandit Kashinath Pulapanda, renowned exponent of Odissi style of music and Director of Srijan, an academy of Odissi dance are selected for the Guru Kelucharan Award for 1999.

23 : Mr. Justice Ajay Kumar Banerji assumes the Chairmanship of the Company Law Board for three years.

24 : Former Prime Minister, Mr. V.P. Singh is named for the B.P. Mandal Memorial Honest Leader Award for his services towards the upliftment of the depressed sections of the society.

* RBI projects a 6 to 6.5 per cent GDP growth rate for the current fiscal 1999-2000.

25 : The Central Electricity Authority approves India's largest Rs. 6400-crore Cuddalore Power Project to be installed in Tamil Nadu.

26 : Mr. G.V. Ramakrishna, Chairman of the Disinvestment Commission, urges a national consensus on an eight-pronged economic blueprint including privatisation of banks.

28 : Indian Oil Corporation bags the Institute of Chartered Accountants of India Award for the year 1997-99 for best presented accounts.

29 : The general elections '99 are estimated to cost Rs. 900 crores, registering a whopping 8000 per cent increase over the past 32 years, according to the Election Commission.

30 : Mr. Jagan Nath Kaul, known as "Papaji", of the SOS Villages of India is conferred the Rajiv Gandhi National Sadbhavana Award for his outstanding work in promoting the unity and brotherhood among the younger generation.

* Mr. Khushwant Singh, noted journalist, is selected for the Sulabh International's "Honest Man of the Year" 1998 award.

SEPTEMBER 1999

1 : The Reserve Bank of India simplifies the forex norms for students studying abroad. Now students need not produce journey tickets for availing foreign exchange.

* Mr. Gaur Prasad Goenka is elected the new President of FICCI.

2 : Mr. N. Ravi, editor of *The Hindu*, is elected the Chairman of the Press Trust of India's Board of Directors.

5 : Polling in the first phase covering 145 Lok Sabha constituencies spreading over 16 States and Union Territories held.

6 : The indigenously-built anti-tank missile *Nag*, is test-fired successfully from the Interim Test Range at Chandipur-on-Sea in Balasore district of Orissa.

* Prof. S. Gupta Nair is named for the prestigious 1999 Vallathol Literary Award for his outstanding works in Malayalam.

7 : Mr. Shalendra Kumar Gupta is the new Chairman and MD of VSNL.

8 : The President, Mr. K.R. Narayanan gives away the UNESCO's Noma Literacy Prize for 1999 to Mr. Bhaskar Chatterjee, the Director-General of the National Literacy Mission in Delhi.

9 : Air India is appointed as the sole agent for selling Indrall Passes through its offices/agents in other countries.

* Mr. V. Sudarshan, former foreign editor of *The Pioneer* and presently the director of "Research Group", is conferred the 1999 Appan Menon Award for his outstanding contribution to international politics and security issues.

11 : India rejects the US proposal for despatching a senior official to India for deliberating the issue of religious freedom in the country.

13 : Indian Railways revives 77-year-old steam engine to be used to haul a tourist train between Howrah and Bandel.

14 : Supreme Court dismisses the Election Commission's petition seeking directions to implement its guidelines to prohibit the publication of exit-polls and opinion polls during the polling period.

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* Air Marshal S.S. Hussain Naqvi, who had resigned as Deputy Chief of Air Staff but later on sought reinstatement, is appointed as Senior Air Staff Officer (SASO) at Training Command, Bangalore.

17 : With a readership of 94.54 lakhs, *Daily Thanthi*, a Tamil newspaper becomes the most sought-after publication in India, according to the National Readership Survey '99 (Round-I).

19 : Mr. Babulal Jain is honoured with the first Sahu Ashok Jain Smriti Award for social service.

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Association, is conferred the Scholarly Achievement Award for promotion of peace and culture by the Institute of Oriental Philosophy, Japan.

21 : Election Commission bans campaigning and ads on electronic media by parties.

22 : Guru Pankaj Charan Das, exponent of the Odissi dance form, Durlabha Chandra Singh and Manimala Devi, noted stage artistes, and Pandit Kashinath Pujapanda, renowned exponent of Odissi style of music and Director of Srijan, an academy of Odissi dance are selected for the Guru Kelucharan Award for 1999.

23 : Mr. Justice Ajay Kumar Banerji assumes the Chairmanship of the Company Law Board for three years.

24 : Former Prime Minister, Mr. V.P. Singh is named for the B.P. Mandal Memorial Honest Leader Award for his services towards the upliftment of the depressed sections of the society.

* RBI projects a 6 to 6.5 per cent GDP growth rate for the current fiscal 1999-2000.

25 : The Central Electricity Authority approves India's largest Rs. 6400-crore Cuddalore Power Project to be installed in Tamil Nadu.

26 : Mr. G.V. Ramakrishna, Chairman of the Disinvestment Commission, urges a national consensus on an eight-pronged economic blueprint including privatisation of banks.

28 : Indian Oil Corporation bags the Institute of Chartered Accountants of India Award for the year 1997-98 for best presented accounts.

29 : The general elections '99 are estimated to cost Rs. 900 crores, registering a whopping 8000 per cent increase over the past 32 years, according to the Election Commission.

30 : Mr. Jagan Nath Kaul, known as "Papaji", of the SOS Villages of India is conferred the Rajiv Gandhi National Sadbhavana Award for his outstanding work in promoting the unity and brotherhood among the younger generation.

* Mr. Khushwant Singh, noted journalist, is selected for the Sulabh International's "Honest Man of the Year" 1998 award.

SEPTEMBER 1999

1 : The Reserve Bank of India simplifies the forex norms for students studying abroad. Now students need not produce journey tickets for availing foreign exchange.

* Mr. Gauri Prasad Goenka is elected the new President of FICCI.

2 : Mr. N. Ravi, editor of *The Hindu*, is elected the Chairman of the Press Trust of India's Board of Directors

5 : Polling in the first phase covering 145 Lok Sabha constituencies spreading over 16 States and Union Territories held.

6 : The indigenously-built anti-tank missile *Nag*, is test-fired successfully from the Interim Test Range at Chandipur-on-Sea in Balasore district of Orissa.

* Prof. S. Gupta Nair is named for the prestigious 1999 Vallathol Literary Award for his outstanding works in Malayalam.

7 : Mr. Shailendra Kumar Gupta is the new Chairman and MD of VSNL.

8 : The President, Mr. K.R. Narayanan gives away the UNESCO's Noma Literacy Prize for 1999 to Mr. Bhaskar Chatterjee, the Director-General of the National Literacy Mission in Delhi.

9 : Air India is appointed as the sole agent for selling Indral Passes through its offices/agents in other countries.

* Mr. V. Sudarshan, former foreign editor of *The Pioneer* and presently the director of "Research Group", is conferred the 1999 Appan Menon Award for his outstanding contribution to international politics and security issues.

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by Mr. Bhiram Bhagat, former Rajasthan Governor, at a function organised by the KunKund Sabha Mandap.

20 : The Law Commission of India strongly recommends a fixed five-year term for the Lok Sabha and the State Assemblies.

★ Mrs. Shobha Subramanyan, MD of the Anand Bazar Patrika Group of Publications, is elected President of the Indian Newspaper Society (INS) replacing Mr. Mammen Mathew.

★ The Project Approval Board permits Maruti Udyog Ltd. to roll out four new car models.

22 : India and Russia resolves to cooperate in fight against terrorism.

23 : Supreme Court fixes three-year time limit for criminal trials.

★ First-over Hindi Internet portal is inaugurated and with its help millions would now be able to take advantage of the information super-highway.

★ BSE to sign info-sharing pact with London Stock Exchange (LSE).

24 : Dr. K. Kasturirangan, Space Commission Chairman and Secretary, Department of Space, is presented the first Muri M. Chigani Award for excellence in applied physics.

★ Mr. Goutam Rakshit is elected new Chairman of the Audit Bureau of Circulations (ABC)

★ Gas Authority of India Limited to invest Rs 10,000 crore in next six years for various projects

25 : SBI hikes FCNR (B) deposit interest rates by 0.25% across the board in US dollars, GBP, DEM and Euro for all maturities with effect from September 27

26 : Union Cabinet approves the proposed hike in the authorised capital of FCI from Rs. 1500 crore to Rs. 2000 crore

★ NTPC to raise Rs 30,000 crore to finance its investments to become a 30,000 MW power utility by the year 2007.

27 : World Tourism Day is observed.

★ India and China agree to boost mutual cooperation.

★ Two Indian software giants Mr. Azim Hasham Premji of WIPRO and Mr. N.R. Narayana Murthy of Infosys, are praised by *Wall Street Journal* for their services to the economy of India.

★ Mr. Harshad Mehta and three others are convicted by the first ever verdict in the multi-crore securities scam of 1992.

28 : A hoard of gold coins dating back to the time of Mughal Emperor Muhammad Shah (1719-48 AD) is found at Kamal.

29 : The indigenously-built unmanned aircraft *Nishant* is successfully test flown from the Interim Test Range at Chandipur-on-Sea, about 15 km from Balasore, Orissa.

★ Supreme Court rules that only reliable dying declaration is admissible in evidence that can be the basis of the conviction of the accused.

★ Prasar Bharati and the Board of Control for Cricket in India sign an agreement for the exclusive telecast rights of all international and domestic matches in India for a five year duration.

OCTOBER 1999

1 : Government slashes the targeted capacity addition during the Ninth Plan to 28,044 MW as against the initial projection of 40,245 MW.

★ International Day of Older Persons is observed.

3 : Elections to the 13th Lok Sabha spread in five phases end.

★ According to a study by the Centre for Strategic and International Studies (CSIS), India will become a major importer of natural gas and oil by 2005.

5 : Medium range surface-to-air missile Akash is successfully test fired from the Interim test range at Chandipur-on-Sea.

★ Government hikes diesel prices by 40 per cent (ex-storage price).

★ India refuses to attend the CTBT review meeting in Vienna.

★ The former President, Dr. S.D. Sharma is chosen for the Indira Gandhi Award for National Integration for the year 1998.

8 : The results of the general elections for the 13th Lok Sabha declared—BJP emerges as the single largest party. NDA led by Mr. A.B. Vajpayee gets 303 seats.

★ Former Lok Sabha Deputy Speaker Mr. P.M. Sayeed creates a Parliamentary record by winning the Lakshadweep seat for the tenth time in a row.

★ The Supreme Court rejects the plea of four condemned prisoners in the Rajiv Gandhi assassination case for a review of its earlier judgement.

10 : Thirteenth Lok Sabha is constituted by the Election Commission.

★ RBI modifies the scheme of collateralised lending facility.

11 : President, Mr. K.R. Narayanan invites Mr. Atal Behari Vajpayee to form the government at the Centre.

12 : Meghalaya Chief Minister, Mr. B.B. Lyngdoh the United Democratic Party breaks its 15-month old alliance with the Congress and forms a new coalition with the Nationalist Congress Party and the BJP.

★ The quick estimates of Index of Industrial Production (IIP) show an overall growth of 6 per cent between April and August, 1999 over the corresponding period last year.

13 : Prime Minister, Mr. Atal Behari Vajpayee begins his third term in office; A 70-member ministry sworn in with a good representation to women (7).

14 : The government orders a CBI probe into the sabotage aspect of the Gaisal train disaster of August 2, 1999 in which at least 300 people were killed.

★ The Public sector financial institutions oppose the specific recommendations of the Kumar Mangalam Birla Committee on the issue of nominee directors.

15 : In a significant ruling, Mr. Justice O.P. Garg of the Allahabad High Court rules that law does not empower a Judge of the High Court, to prohibit the litigant or his counsel from making arguments in Hindi, if he so chooses.

16 : The second National Commission on Labour is constituted under the chairmanship of former Labour Minister, Mr. Ravindra Varma.

17 : Ms. C. Devika (Tamil Nadu) and Mr. Khem Raj Sharma (Jammu & Kashmir) are presented the Youth Volunteers against Poverty Awards 1999 by Nehru Yuva Kendra Sangathan (NYKS) and UNDP.

18 : Mr. Siddhartha Brahma of Kendriya Vidyalaya, Kharagpur wins the first prize at the First National Science Olympiad organised by the Science Olympiad Foundation in New Delhi.

19 : Mrs. Sonia Gandhi is the Leader of Opposition in the 13th Lok Sabha.

20 : At Washington's initiative, National Security Adviser, Mr. Brajesh Mishra visits US for talks on Pakistan.

21 : The NDA Government decides to include 54 castes, including Jats in Rajasthan and Delhi in the OBCs category for job reservations in Central Services.

★ Veteran film-maker, Mr. B.R. Chopra is chosen for Dadasaheb Phalke Award for 1998.

★ Mr. Jaswant Singh is appointed the Leader of the Rajya Sabha.

22 : After more than nine years, CBI files its first charge-sheet in the Bofors case in a court in New Delhi.

★ President, Mr. K.R. Narayanan presents four Kirti Chakras and 29 Shaurya Chakras to personnel of the Armed Forces and civilians for peace time and war-time operations and bravery.

★ Mr. G.V. Balyogi is unanimously elected Speaker of the Lok Sabha for the second time in succession.

24 : Prime Minister, Mr. Atal Behari Vajpayee announces Rs. 250 crore assistance for Orissa including Rs. 50 crore to continue relief and rehabilitation measures for the cyclone-affected areas.

25 : Government announces significant economic decisions; FDI projects to be cleared automatically, TRAI to be given more powers to boost investor confidence and top priority to DoT corporatisation.

26 : Mr. Lohi Mansingh, India's High Commissioner in Britain to be the India's new Foreign Secretary from December 1, 1999.

★ As per Electronics and Computer Software Export Promotion Council, software exports registered a 37 per cent growth during the first-half of the current financial year.

★ The International Finance Corporation is to invest \$9 million in a 20-megawatt power plant in Andhra Pradesh.

★ India and United Arab Emirates (UAE) decide to enforce extradition treaty with immediate effect.

27 : The week-long transport operators' strike is called off by the government not rolling back the diesel price hike but agrees to accord transport industry status.

★ The Lok Sabha unanimously passes the 84th Constitution Amendment Bill to extend reservation for the Scheduled Castes and Scheduled Tribes and Anglo-Indians in Parliament and State Assemblies for ten more years from January 20, 2000.

★ Veteran Congress leader, Mr. P.M. Sanyal is unanimously re-elected Deputy Speaker of the Lok Sabha for the second time in succession.

28 : Gururaj Deshpande, co-founder and Chairman of Massachusetts-based Gycamore Networks Inc., becomes the richest Indian American entrepreneur in the United States.

★ Noted flutist Hariprasad Chaurasia, noted theatre personality Pandit Gatyader Dubey, dance exponent K.P. Kilappa and visual arts exponent Francis Newton Souza are selected for the Padma Samman for 1999-2000 by Madhya Pradesh Government.

29 : Cyclone's storm and flood's devastate the entire Orissa Coast, spread across 12 districts and parts of neighbouring West Bengal.

★ In its monetary and credit policy for the second half of the current fiscal year, RBI cuts CRR by one per cent with a view to increase liquidity at the disposal of banks.

★ RBI estimates the GDP from 6 to 6.5 per cent in the current fiscal (1999-2000).

NOVEMBER 1999

1 : Mr. Hansa Mehta is appointed Solicitor General of India.

★ Andhra Pradesh Government declares Srisaika Area District as a 'Red' area for economic empowerment and development.

★ Exports in the first half of the current fiscal year register an increase of 7.4 per cent.

★ Former Supreme Court Chief Justice, Mr. Jagdish Sharan Verma is appointed the Chairman of the National Human Rights Commission (NHRC).

2 : According to a Nasscom Survey, the nation's software exports have gone up by 58% to touch the Rs. 8,060 crore (\$ 1.87 billion) mark during the first half of the current fiscal.

3 : Militants attack the high security Badami Bagh cantonment in Srinagar killing seven persons.

★ Quota for Indian Haj pilgrims is increased from 91,000 to 120,000.

4 : Special Judge, Mr. Justice Ajit Bharihoke issues a non-bailable warrant against Ottavio Quattrocchi in the Bofors Case.

★ Super-cyclone-hit Paradip Port in Orissa resumes operation.

★ Mr. K.C. Pant, Deputy Chairman of Planning Commission, is to be the guest of honour at the three-day conference at Centre for International Development, Harvard University, USA.

★ The government starts formulating a comprehensive national policy for restructuring and disinvestment in 882 State Public Sector Enterprises (PSUs).

5 : Pope John Paul II, the supreme spiritual leader of around one billion Catholics, arrives in New Delhi.

★ Prime Minister, Mr. Atal Behari Vajpayee announces an additional relief of Rs. 290 crore to cyclone-hit Orissa.

6 : Pope John Paul II in New Delhi signs the Asian Synod document "Ecclesia in Asia" (Church in Asia), testifying that Jesus Christ "took flesh as an Asian" and stresses on inter-religious dialogue.

8 : Austria, a strong critic of the Pokhran nuclear tests and a leading member of the EU, acknowledges India's status as N-power.

★ India and Austria sign two agreements to boost investments and avoidance of double taxation.

9 : Ten Pakistan soldiers are killed as Indian troops repulse an attack by Pakistan Army in Uri sector of Jammu and Kashmir.

★ BHEL bags the single largest order for boilers for NTPC's 2000 megawatt Talcher Super Thermal Power Project (Stage II) in Orissa.

★ Sarangi wizard Pandit Ram Narayan is selected for the Aditya Vikram Birla Kalashikhar Puraskar for 1999 for his lifetime achievement in Hindustani classical instrumental music.

10 : The official toll in the Orissa cyclone swells to 7,474.

★ Renowned vocalist Pandit C.R. Vyas is chosen for Madhya Pradesh Government's Tansen Samman, 1999 for his outstanding contribution to Hindustani classical music.

★ Ruling Shiromani Akali Dal nominee Bibi Jagir Kaur is re-elected president of the Shiromani Gurdwara Prabandhak Committee (SGPC).

11 : Maharashtra government decides to revive the State Minorities Commission.

12 : Mr. Ram Prakash Gupta is sworn in as Chief Minister of Uttar Pradesh in place of Mr. Kalyan Singh.

★ Lata Mangeshkar and Dev Anand are conferred the Lifetime Achievement awards at the HT-Sansui Viewers Choice Movie Award in New Delhi.

13 : A collection of Essays *Nehru and His Vision* authored by President, Mr. K.R. Narayanan is released in the capital.

14 : Nineteenth India International Trade Fair is inaugurated by Commerce and Industry Minister, Mr. Murali Manohar in New Delhi.

15 : Mr. M.M. Rajendran is sworn in as the Governor of Orissa.

18 : Prime Minister, Mr. Atal Behari Vajpayee inaugurates the Ministerial Conference of UN Economic and Social Commission for Asia and Pacific (ESCAP) in New Delhi.

20 : The government recommends the names of Ms. Lata Mangeshkar, the melody queen, Mr. Cho Ramaswamy, a senior journalist, Mr. Fali S. Nanani, an eminent Jurist and Mr. Nanaji Deshmukh, a veteran RSS leader for nomination to the Rajya Sabha.

21 : Indian Space Research Organisation and French national space agency sign a statement of intent for joint development of a small scientific satellite. *Megha Tropiques* to be launched by India's Polar Satellite Launch Vehicle (PSLV) in 2005.

22 : Four more Ministers are inducted in NDA government. They are Mr. Sukhdev Singh Dhindsa (Works and Estates), Prof. C.P. Thakur (Water Resources), Mr. Rajnath Singh (Surface Transport)—all Cabinet Ministers and Mr. Arun Shourie (Minister of State for Planning, Statistics and Programme Implementation). Surface Transport Minister, Mr. Nitish Kumar is shifted to Ministry of Agriculture.

★ Mrs. V.S. Rama Devi, Governor of Himachal Pradesh is shifted to Karnataka replacing Mr. Khurshid Alam Khan while Mr. Vishnu Kant Shastri is appointed Governor of Himachal Pradesh.

24 : Mr. Francisco Sardinha is sworn in as the Chief Minister of Goa leading a 14-member Indian National Congress (Sardinha) Ministry. Mr. Sardinha replaces Mr. Luizinho Faleiro.



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2. WORLD

Round-up

Pakistan : Rise Of Yet Another Ominous Crescent To India's West

Perhaps a section of historians who would chronicle the bizarre developments in Pakistani politics would record that when Pakistan Prime Minister Nawaz Sharif was itching to have the head of the Army Chief, General Pervez Musharraf on a platter, little did the ousted Prime Minister know that the army in Pakistan would have the last laugh. Poor Sharif failed to make the grade in the home as well as on the history of his own country. As Nawaz Sharif made his last desperate move of sacking the army chief even as the latter was aboard the plane bound homeward from Sri Lanka, he couldn't size up that the shots would backfire.

Turning the tables on Prime Minister Nawaz Sharif who sacked him on October 12, 1999, Pak Army Chief General Pervez Musharraf in a swift counter move seized power in a bloodless military coup the same day dismissing Nawaz Sharif's Government. He is the fourth Pak General after General Ayub Khan, Yahya Khan and General Zia-ul-Haq to usurp political power in Pakistan.

Hand-picked by Nawaz Sharif himself in October 1993, following stand-off with General Jehangir Karamat, the Delhi-born General Pervez Musharraf is the second *mohajir* Army chief, after General Aslam Beg, to occupy the post leap-frogging two senior Generals. He seems to be all set to repeat history through his planned prosecution of his one-time promoter Nawaz Sharif for treason in the footsteps of General Zia-ul-Haque who had no qualms of conscience to hang his benefactor Z.A. Bhutto.

One more civilian government in Pakistan crumbled to the dustheap of history on October 12 when the Prime Minister, riding the wave of unpopularity of his own creation, what with the row with the judiciary, the tilt with the media and the chronic tug of war with the military brass, elected to cut the Gordian knot by firing the Army Chief and replacing him by Lt. Gen. Khwaja Ziauddin, the ISI Chief. The Army revolted and within hours, the soldiers were everywhere not only in Islamabad but all over Pakistan. PTV went off the air and all vital installations were under the military control. The Prime Minister himself turned prisoner in his

own house. He now faces a possible death sentence in an Anti-terrorist Court following his alleged abortive attempt to finish off the Army Chief by refusing permission to fuel-deficient plane carrying the Pak Army Chief and two-hundred other passengers to land at Karachi airport that might have resulted in a crash.

The differences between the Sharif government and the Army Chief came to the boil over the handling of the Kargil conflict and USA had warned the civilian government weeks ago of a possibility of "extra-constitutional change" in Pakistan.

To the rest of the world, South Asia, and more particularly, the Indian subcontinent, the unfolding scenario presented a study in contrast : while Pakistan was placed under the spell of yet another military rule on October 12, the world's largest democracy, in the biggest election exercise anywhere in the world, had brought to power the Vajpayee government in the neighbouring India. Strangely, one must presume, at least for the time being, there was jubilation in Pakistan over the 'return of Generals' and the good riddance of the 'misrule' of Sharif. Sharif's detractors, Ms. Benazir Bhutto, forgetting for a while what the military rulers did to her own father Zulfikar Ali Bhutto (He was executed under the military dictatorship of General Zia-ul-Haq in 1979), and the ace-cricket-turned politician, Imran Khan, turned admirers of General Pervez Musharraf. The warring and sparring politicians in Pakistan seemed to forget that the remedy for any alleged misrule is at best a change of government through the ballot, and not a return to the nightmarish days of Ayub Khan, Yahya Khan and Zia-ul-Haq.

True to form, and falling in line with the earlier military dictators who ruled Pakistan for nearly 25 years of its 52-year old history, Gen. Musharraf, just three days after the coup, suspended the Constitution and proclaimed himself the Chief Executive of Pakistan. While declaring a State of Emergency throughout the country, he suspended the National Assembly and state assemblies and curtailed the powers of the Supreme Court, but stopped short of declaring martial law. He, however, allowed President Rafiq Tarar to continue in office. "The whole of Pakistan will come under the control of the armed forces," the proclamation said as army officers moved to take key positions in the administration.

While USA and UK desired an early return to an rule in Pakistan, Gen. Musharraf wouldn't turn them with any promise of an early date for return to the democratic process. At least, he was not enough in this regard; one of the military rulers of Pakistan promised return to civilian rule within three months after he assumed power and he ruled for 11 years! Yet another clever move to win popular sympathy taken by the new ruler of Pakistan was ordering the country's commercial banks to freeze deposits of all notable politicians and their spouses.

The Chief Executive of Pakistan assured the rest of the world that there would be no change in Pakistan's foreign policy including the policy towards India. One can appreciate this viewpoint just because Pakistan's foreign policy has always been moulded by the military brass from behind the scenes. No wonder the new military ruler talked like any other Pakistani politician on October 17, 1999 when he announced a unilateral military de-escalation along the India-Pakistan border and pullback of troops that had moved to the border areas. He called for a dialogue with India in an obviously conciliatory tone to impress "Pakistanis and friends in the West and the Muslim world". But he unmasked himself on November 1, 1999 when he said that hostility from India would be met with hostility and peace with peace. "Nobody threatens us without getting a threatening response," he said.

Chastened by the experience of four wars with Pakistan, India has been monitoring the developments in Pakistan with all the seriousness they merit. It knows the minds of all military leaders and knows the stuff of which the likes of Ayub Khan, Yahya Khan, etc. is made of. India knows too that it cannot shake hands with a mailed fist. Military rule in Pakistan has always been inimical to the security and interests of India which was forced to fight two wars under the dictatorships of General Ayub Khan (1965) and General Yahya Khan (1971). However, the assumption of power by General Pervez Musharraf who, traumatized by partition, has imbibed a sharp anti-India psyche, does not augur well for India; more so as a Chief Executive of a nuclear-armed Pakistan. Notwithstanding a facade of congratulating Prime Minister, Mr. Atal Behari Vajpayee on assumption of office and offer of resumption of stalled Indo-Pak talks and "unilateral" withdrawal of forces from international borders (scrupulously excluding LoC where he would like to settle scores with India following his Kargil fiasco), India has to be very vigilant against the likely prospect of heightened danger of escalation of proxy war and cross border terrorism and even pushing the nuclear button by an avowed anti-Indian General and no-compromiser on Kashmir issue.

Mark his reaction to Mr. Vajpayee's bus diplomacy "There is no harm in launching a bus service but there will be no change in Pakistan's stand on Kashmir" he asserted. Despite an invitation by Sharif, he did not turn up at the Indo-Pak border to welcome Vajpayee in February 1999. In view of the changed worse scenario to our immediate west, India's defence forces are ever on the alert and India has told Pakistan that before any talks could be thought of, Pakistan must first stop trans-border terrorism, a condition for which India has the full backing of USA. The developments in Pakistan should reinforce the conviction that India has to be eternally vigilant with regard to every move coming from Pakistan.

For Pakistan, the period of yet another prolonged nightmare has just begun.

Indonesia : Ushering In Democracy

On October 20, 1999 Indonesia emerged as the world's third largest democracy, after India and the United States when Mr. Abdurrahman Wahid, the Islamic scholar who champions a secular society for his country, was elected the fourth President of Indonesia after he defeated the icon of the masses, Ms. Megawati Sukarnoputri. A few days before, the People's Consultative Assembly (MPR) rejected by 355 votes to 322 the "accountability reports" presented by the Interim President B. J. Habibie. This was tantamount to passing a vote of no-confidence against him. Mr. Habibie could have stayed in the Presidential contest, but after the vote he chose to respect the MPR mandate and opt out of the race.

The supporters of Ms. Megawati Sukarnoputri would have plunged Indonesia into yet another bout of bloody violence had not the MPR elected her the Vice-President a day after the election of Abdurrahman as President. Just before the Presidential ballot, two influential figures, Wiranto, chief of the armed forces, and Tanjung, chairman of the Golkar Party, withdrew their candidacies, citing the need for national unity. That left Ms. Megawati to face Mr. Habibie, chairman of the Muslim oriented Development Party. She defeated Habibie 396-284.

One of Indonesia's respected intellectuals, Abdurrahman Wahid has long championed civil rights, democracy, the separation of the mosque—and the state and a tolerant Islam that embraces non-Muslims in fraternal embrace. "There is no original race in Indonesia," frankly a new leader of Indonesian democracy whose grandmother of mine was Chinese. The

ason why I don't accept the idea of racial
ferences in Indonesia."

As Islamic fundamentalism raises itself as a
dra-headed evil in different parts of the world,
ere is a Muslim cleric who gives a different tune :
or me, an Islamic society in Indonesia is treason
against the Constitution, because it will make non-
uslims second-class citizens," he said way back
1995. His secular stance set him on a collision
urse with other Muslim leaders and his liberalism
ettled former President Suharto.

Mr. Wahid and Ms. Sukamoputri were allies in
the June parliamentary poll that paved the way for
the Presidential elections. Even when the duo
contested the highest office in the country, they
never allowed any kind of bitterness to come in
between. The fact that Wahid is invalid in several
respects—a history of two strokes, blindness and
ill that—would make the Vice-President to play a
igger role in the national politics. Yet, together the
two leaders are expected to bring about national
unity in a fractured and diverse country of about
13,000 islands and more than 200 million people.
In making his reformist Cabinet, the
new ruler of Indonesia broke with an authoritarian
past that gave scant regard for the susceptibilities
of the subjects. It was a line-up of new faces.
Mr. Kwik Kian Gie, an economist and close aide of
S. Sukarnoputri was named the Economics
Minister while Mr. Juwono Sudarsono took over as
Finance Minister replacing Gen. Wiranto who was
shifted to a less powerful job of Security and Political
Coordinating Minister. Mr. Alwi Shihab became the
new Foreign Minister replacing Mr. Ali Alatas who
had held the post for over a decade. The President
called his Cabinet a cabinet of "national unity", a
cabinet that sought to represent diverse interests
and whittle down role of the army. In all 36 ministers
were sworn in on October 29.

The President and the Vice-President do make
an excellent team and they have the full support of
the masses and parliamentarians to make
Indonesia a democratic and economic power in
South East Asia. Meanwhile, the demand for a
separate Muslim state by Aceh Island, the Muslim-
dominated island, on the pattern of East Timor,
and sectarian violence in other islands, pose a new
challenge for the secular Government.

US Senate Rejects CTBT

"Never before has a serious treaty involving
nuclear weapons been handled in such a reckless
and ultimately partisan way. The Senate has a
great responsibility under our Constitution to offer
advice and consent in matters involving treaties.
The Senate has simply not fulfilled that responsibility."
lamented the American President Mr. Bill

Clinton when the CTBT (Comprehensive Test Ban
Treaty) was rejected by a 51 to 48 margin by the
US Senate on October 13, 1999. The action of the
Senate amounted to a knockdown blow to the
foreign policy of Mr. Clinton. Only four Republicans
crossed over and joined 44 Democrats in voting to
ratify the CTBT. But that was poor consolation as
a two-thirds majority or a total of 67 votes was
required to see the Treaty through.

Both the US President and Vice-President were
determined not to be swept away by the coup pulled
off by the Senate, the latter (Mr. Albert Gore)
resolving to resubmit the Treaty for ratification by
the Senate if elected President.

An agitated American President said that the
USA itself wouldn't conduct any nuclear tests and
appealed to Russia, China, Britain and France to
exercise self-restraint in this regard. He warned the
newly emerged nuclear-capable states of India and
Pakistan against interpreting the rejection of the
CTBT by the Senate as a sign that USA did not
care whether they ratified the treaty or not.

It was for the second time the American Senate
has rejected a major international treaty. In 1920 it
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Mr. Larry Pressler (New Delhi : November 25, 1999)
CTBT may be revised with important amendments
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Sri Lanka Gears Up For Snap Presidential Polls

It is a ballot war to end another war, and this
time President, Ms. Chandika Kumaratunga sprang
a surprise on all by preponing the Presidential

While USA and UK desired an early return to civilian rule in Pakistan, Gen. Musharraf wouldn't oblige them with any promise of an early date for return to the democratic process. At least, he was frank enough in this regard; one of the military rulers of Pakistan promised return to civilian rule within three months after he assumed power and he ruled for 11 years! Yet another clever move to win popular sympathy taken by the new ruler of Pakistan was ordering the country's commercial banks to freeze deposits of all notable politicians and their spouses.

The Chief Executive of Pakistan assured the rest of the world that there would be no change in Pakistan's foreign policy including the policy towards India. One can appreciate this viewpoint just because Pakistan's foreign policy has always been moulded by the military brass from behind the scenes. No wonder the new military ruler talked like any other Pakistani politician on October 17, 1999 when he announced a unilateral military de-escalation along the India-Pakistan border and pullback of troops that had moved to the border areas. He called for a dialogue with India in an obviously conciliatory tone to impress "Pakistani friends in the West and the Muslim world". But he unmasked himself on November 1, 1999 when he said that hostility from India would be met with hostility and peace with peace. "Nobody threatens us without getting a threatening response," he said.

Chastened by the experience of four wars with Pakistan, India has been monitoring the developments in Pakistan with all the seriousness these merit. It knows the minds of all military leaders and knows the stuff of which the likes of Ayub Khan, Yahya Khan, etc. is made of. India knows too that it cannot shake hands with a mailed fist. Military rule in Pakistan has always been inimical to the security and interests of India which was forced to fight two wars under the dictatorships of General Ayub Khan (1965) and General Yahya Khan (1971). However, the assumption of power by General Pervez Musharraf who, traumatized by partition, has imbibed a sharp anti-India psyche, does not augur well for India; more so as a Chief Executive of a nuclear-armed Pakistan. Notwithstanding a facade of congratulating Prime Minister, Mr. Atal Behari Vajpayee on assumption of office and offer of resumption of stalled Indo-Pak talks and "unilateral" withdrawal of forces from international borders (scrupulously excluding LoC where he would like to settle scores with India following his Kargil fiasco), India has to be very vigilant against the likely prospect of heightened danger of escalation of proxy war and cross border terrorism and even pushing the nuclear button by an avowed anti-Indian General and no-compromiser on Kashmir issue.

Mark his reaction to Mr. Vajpayee's bus diplomacy "There is no harm in launching a bus service but there will be no change in Pakistan's stand on Kashmir" he asserted. Despite an invitation by Sharif, he did not turn up at the Indo-Pak border to welcome Vajpayee in February 1999. In view of the changed worse scenario to our immediate west, India's defence forces are ever on the alert and India has told Pakistan that before any talks could be thought of, Pakistan must first stop trans-border terrorism, a condition for which India has the full backing of USA. The developments in Pakistan should reinforce the conviction that India has to be eternally vigilant with regard to every move coming from Pakistan.

For Pakistan, the period of yet another prolonged nightmare has just begun.

Indonesia : Ushering In Democracy

On October 20, 1999 Indonesia emerged as the world's third largest democracy, after India and the United States when Mr. Abdurrahman Wahid, the Islamic scholar who champions a secular society for his country, was elected the fourth President of Indonesia after he defeated the icon of the masses, Ms. Megawati Sukarnoputri. A few days before, the People's Consultative Assembly (MPR) rejected by 355 votes to 322 the "accountability reports" presented by the interim President B. J. Habibie. This was tantamount to passing a vote of no-confidence against him. Mr. Habibie could have stayed in the Presidential contest, but after the vote he chose to respect the MPR mandate and opted out of the race.

The supporters of Ms. Megawati Sukarnoputri would have plunged Indonesia into yet another bout of bloody violence had not the MPR elected her as the Vice-President a day after the election of Abdurrahman as President. Just before the Vice-Presidential ballot, two influential figures, Gen. Wiranto, chief of the armed forces, and Akbar Tanjung, chairman of the Golkar Party, withdrew their candidacies, citing the need for national unity. That left Ms. Megawati to face Mr. Hamzah Haz, chairman of the Muslim oriented United Development Party. She defeated Haz handily, 396-284.

One of Indonesia's respected intellectuals, Abdurrahman Wahid has long championed human rights, democracy, the separation of the church—mosque—and the state and a tolerant Islam that embraces non-Muslims in fraternal embrace. "There is no original race in Indonesia," frankly admits this new leader of Indonesian democracy. "A great grandmother of mine was Chinese. That is the

reason why I don't accept the idea of racial differences in Indonesia."

As Islamic fundamentalism raises itself as a hydra-headed evil in different parts of the world, here is a Muslim cleric who gives a different tune: "For me, an Islamic society in Indonesia is treason against the Constitution, because it will make non-Muslims second-class citizens," he said way back in 1995. His secular stance set him on a collision course with other Muslim leaders and his liberalism nettled former President Suharto.

Mr. Wahid and Ms. Sukarnoputri were allies in the June parliamentary poll that paved the way for the Presidential elections. Even when the duo contested the highest office in the country, they never allowed any kind of bitterness to come in between. The fact that Wahid is invalid in several respects—a history of two strokes, blindness and all that—would make the Vice-President to play a bigger role in the national politics. Yet, together the two leaders are expected to bring about national unity in a fractured and diverse country of about 13,000 islands and more than 200 million people.

In making his reformist Cabinet, the new ruler of Indonesia broke with an authoritarian past that gave scant regard for the susceptibilities of the subjects. It was a line-up of new faces. Mr. Kwik Kian Gie, an economist and close aide of Ms. Sukarnoputri was named the Economics Minister while Mr. Juwono Sudarsono took over as Defence Minister replacing Gen. Wiranto who was shifted to a less powerful job of Security and Political Coordinating Minister. Mr. Alwi Shihab became the new Foreign Minister replacing Mr. Ali Alatas who had held the post for over a decade. The President called his Cabinet a cabinet of "national unity", a cabinet that sought to represent diverse interests and whittle down role of the army in all 35 ministers were sworn in on October 29.

The President and the Vice-President do make an excellent team and they have the full support of the masses and parliamentarians to make Indonesia a democratic and economic power in South East Asia. Meanwhile, the demand for a separate Muslim state by Aceh island, the Muslim-dominated island, on the pattern of East Timor, and sectarian violence in other islands, pose a new challenge for the secular Government.

US Senate Rejects CTBT

Never before has a serious treaty involving nuclear weapons been handled in such a reckless and ultimately partisan way. The Senate has a solemn responsibility under our Constitution to offer advice and consent in matters involving treaties. The Senate has simply not fulfilled that responsibility. I regret the American President Mr. Bill

Clinton when the CTBT (Comprehensive Test Ban Treaty) was rejected by a 51 to 48 margin by the US Senate on October 13, 1993. The action of the Senate amounted to a knockdown blow to the foreign policy of Mr. Clinton. Only four Republicans crossed over and joined 44 Democrats in voting to ratify the CTBT. But that was poor consolation as a two-thirds majority or a total of 67 votes was required to see the Treaty through.

Both the US President and Vice-President were determined not to be swept away by the coup pulled off by the Senate, the latter (Mr. Albert Gore) resolving to resubmit the Treaty for ratification by the Senate if elected President.

An agitated American President said that the USA itself wouldn't conduct any nuclear tests and appealed to Russia, China, Britain and France to exercise self-restraint in this regard. He warned the newly emerged nuclear-capable states of India and Pakistan against interpreting the rejection of the CTBT by the Senate as a sign that USA did not care whether they ratified the treaty or not.

It was for the second time the American Senate has rejected a major international treaty. In 1920 it had rejected the Treaty of Versailles.

Partly, the President has to blame himself for the Senate rejection of the CTBT for the vote against the Treaty was the result of the failure of the Clinton Administration to build a consensus within the country.

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As per Article 14 of "The Entry into Force" to be operational, the CTBT has to be signed by 44 countries, which have atomic power plants but only 41 countries have so far signed it and of these only 23 countries have ratified it. An overconfident Clinton administration was obsessed with getting others such as India and Pakistan sign the Treaty, overlooking the need to build up a democratic consensus in its own country in favour of the Treaty.

Meanwhile, according to former US Senator Mr. Larry Pressler (New York, November 25, 1993) CTBT may be reached with important amendments relating to the contentious issue.

Sri Lanka Gears Up For Snap Presidential Polls

It is a battle won to end another war, and this time President, Mr. Chandrika Kumaratunga, is going a step further on all by preparing the Presidential

elections all with the intent to end the ethnic conflict—a promise on the basis of which she was elected in 1994. Seeking to overcome the Opposition challenge in Parliament, the President announced on October 20, 1999 that midterm Presidential elections would be held by mid-January, ten months ahead of schedule. She would thus have parliamentary polls, scheduled for August 2000, held after the presidential elections which she hopes to win with a comfortable majority. The President felt that the lack of two thirds majority in Parliament prevented her from going ahead with her Constitutional peace initiatives.

The snap decision to go for early Presidential polls was welcomed by Mr. Ranil Wickremesinghe, Leader of the Opposition, United National Party (UNP). The three prominent Tamil groups, the Tamil Eelam Liberation Organisation (TELO), Eelam Peoples Revolutionary Liberation Front (EPRLF) and the Peoples Liberation Organisation of Tamil Eelam (PLOTE) have already decided to field a third common candidate. The Tamil parties are sore over the failure of the government and the main Opposition in solving the Tamil problem in Sri Lanka.

In 1994, Ms. Chandrika had won 62 per cent of the votes, the highest any Presidential candidate has secured. The clinching factor in the spectacular victory was the vote from the North-East Tamil majority regions where she polled more than her national average. While her national average was 62.28 per cent, Ms. Chandrika secured 85.14 per cent of the votes polled in Jaffna, Vanni, Batticaloa and Trincomalee districts. But the year 2000 is vastly different from the scenario of 1994. The Kumaratunga government has now brought the entire northern peninsula under its control. The Tamil Tigers are now confined only to the interior of the jungles and now control only Mullaitivu and Killinochi districts and parts of Batticaloa and Mannar.

Ms. Chandrika Kumaratunga knows that the problem of ethnic divide in Sri Lanka cannot be solved through violence and counter-violence and every effort made by her government to open a dialogue with LTTE was torpedoed by LTTE itself. LTTE that sought to tell rest of the world that they alone represented the true aspirations of the Tamil minority in Sri Lanka and in its bid to assert their supremacy, has assassinated every other Tamil leader belonging to other Tamil parties.

It remains to be seen whether Ms. Chandrika's gamble will pay off. But one fact remains. Whosoever becomes the President in 2000, he or she may face yet another period of uncertainty in so far as the total alienation of Tamils from the mainstream of the island's political life is concerned. Meanwhile following the Sri Lankan army's biggest set back in

the 16-year-old ethnic war with LTTE, President, Ms. Chandrika Kumaratunga was contemplating to postpone Presidential elections due to grim developments.

Taliban Refuse To Surrender Laden

Having failed to bring to book the notorious international terrorist, Osama bin Laden, the prime suspect responsible for the bombings of the US embassies in Tanzania and Kenya on August 7, 1998, USA roped in the UN Security Council in its hot pursuit of Bin Laden and the Taliban that has offered sanctuary for him. On October 16, 1999, the UN Security Council imposed sanctions on Afghanistan's Taliban rulers until they surrender Saudi-born dissident Osama Bin Laden for trial on charges that he plotted the 1998 bombings of the US embassies in Africa. The sanctions became effective on November 14 after a 30-day grace period. The sanctions require countries to ban flights by planes owned, operated or leased by the Taliban, and to freeze bank accounts and property owned or controlled by the Taliban that controls 90 per cent of Afghanistan. The only exceptions would be for flights or funds approved in advance on humanitarian grounds by a watchdog sanctions committee to be set up by the Security Council.

The sanctions have put Pakistan in a dilemma. As a member of UN, it is obligatory for it to honour these sanctions which cover export (or even smuggling) of food items to its propped regime in Afghanistan. However, the Jamaat-i-Islami, a fundamentalist outfit of Pakistan, has decided to defy the sanctions and supply wheat flour, rice and other food items to Afghanistan. It has appealed for donations to a fund to finance these supplies.

It may be recalled that shortly after the embassy bombings last year, USA launched missile attacks against bases in Afghanistan alleged to have been used by Bin Laden's al-Qaeda group. US has already frozen the assets of Afghanistan's national Ariana airline and banned US investment in and trade with the area under Taliban control.

Bin Laden and an alleged fellow conspirator Muhammed Atef, were indicted by a US grand jury in New York in November 1998 for allegedly plotting the embassy attacks. The US State Department has offered rewards of \$5 million for information leading to their arrest or conviction.

Though in its immediate reaction Taliban refused to relent on its stand not to hand over Bin Laden to USA, its representative, Mr. Abdul Hakeem Mujahid, had a meeting with the US Assistant Secretary of State for South Asia, Mr. Karl Inderfurth in Washington on October 22, 1999. There were

reports that owing to mounting US pressure Osama was willing to leave his sanctuary in Afghanistan and go to an undisclosed destination.

However, according to the Taliban spokesman, Osama is a "life and death" issue for the Taliban and expelling him would offend Afghans and undermine the Taliban. "If God forbid, we hand him over to anyone else, then we will definitely lose the support of the Afghan people," he said. Sometime back, the militia had proposed a roundtable of Islamic scholars from Afghanistan, Saudi Arabia and an unnamed third country to find an Islamic solution to the issue. The latest funny proposal made by Taliban's supreme ruler, Mullah Mohammed Omar is that the OIC (the Organisation of Islamic Conference) could send a team to monitor Osama's movement to ensure that Osama was not engaged in terrorism. He said that the OIC monitors could "watch over him so that Bin Laden's opponents are sure that he is not using Afghanistan against them."

Russia's Second War In Chechnya

Once you start a conflagration, you wouldn't know where to stop and the Russians, now in the thick of yet another war in Chechnya, in their bid to destroy terrorist bases in Chechnya, are virtually using a sledgehammer to kill flies that have been eluding them. The war now several weeks old has killed several innocent civilians, sending hundreds upon thousands of them scurrying out for safety. While the rest of the world could appreciate Russian action against international terrorism, they were sharply critical of the unnecessary bloodbath imposed on the civilian population of Chechnya and the consequent problem of refugees. USA expressed its shock over the mounting scale of civilian casualties and the exodus from Chechnya. Similar concern was expressed by the UN Secretary General. Pakistan's military rulers who too asked Russia to stop military action in Chechnya (November 25, 1999) were snubbed by Russia to set their own house in order, pointing to the conditions of Muslims in Sindh "where virtually slave-like labour is flourishing".

Russia's Acting Prosecutor-General, Mr. Vladimir Ustinov, reiterated Moscow's claim that foreign mercenaries from Afghanistan, Pakistan, Tajikistan, Jordan, Algeria and even some Baltic States were fighting against Russian forces in Chechnya. He also said that Chechnya rebels had recently received billions of dollars from Arab countries (Kuwait, South Arabia, UAE, Jordan, Yemen) to purchase weapons and for making payment to the mercenaries.

Meanwhile, Moscow offered a \$ 1 million reward for the head of the Chechen warlord, Sham

Basayev, as the Russian troops tightened the noose round the Chechen capital Grozny, unleashing a round-the-clock bombardment to quell the rebel republic.

China At Fifty : An Appraisal

Together with Indian Independence in 1947, the ascendancy of the Communists to power in China marked a watershed in the history of the world, highlighting the resurgence of Asia and the retreat of colonialism and imperialism. India celebrated the Golden Jubilee of her Independence in August, 1997. China too celebrated the 50th birthday of the Communist Revolution on October 1, 1999.

The way China stormed the citadel of power politics shows its "never say die" spirit. For 23 long years, During these years, China has matured as a powerful economic and military giant that is sure to throw its weight in the New Millennium. US Intransigence barred Chinese entry into the UN and today it is one of the five Permanent Members of the UN Security Council. In five decades China has achieved an average annual growth rate of 9.8 per cent. In 1997, its gross domestic product (GNP) reached \$ 1,055 billion, making it in terms of purchasing power parity (PPP) the third largest economy in the world. Per capita income rose to \$ 860, having doubled over the past decade, adult literacy rose to 87 per cent and average life expectancy climbed to 70 years. In just 25 years, China has attracted a direct foreign investment of \$ 140 billion and has accumulated foreign exchange reserves of \$ 120 billion and a trade surplus with the US of about \$ 40 billion. Striking statistics that should inspire our planners and administrators!

Take any field and the average Chinese is possessed of the "killer instinct". In the 1996 Olympics, the Chinese, with the record breaking medal haul, replaced Japan as the fourth country with the largest number of medals. It is this distinctive Chinese psyche that strikes China observers most and that should inspire the developing countries including India. High ambition to become an important power in world politics, Iron resolution, discipline, dedication and perseverance, adherence to the small family norm, importance of education and literacy, and the belief that they know much better than anyone else as to what is good for them and high individualistic and independent thinking and reverence for Chinese values have been the hallmark of every programme China undertook be it political, economic, social and cultural. It is not the sheer number of 1.2 billion people only, but the fact that the Chinese believe that they were, are and will be a great people and this unshakable faith in their own greatness that

permeated their domestic and foreign policies and their relations with USA and USSR (now Russia) and other countries, big and small. The Chinese wanted the rest of the world to treat them for what they are, no less and no more.

East Timor : Tragedy After Triumph

Even at the hour of triumph the leaders of the independence movement in East Timor could feel tremors of a backlash: the ring leaders of the pro-integration movement crying for the blood of the East Timorese who voted for secession on August 30, 1999. Thus, at the dawn of the first crimson sun began a hideous nightmare of looting, burning and killing by anti-independence militias, all with the connivance of the Indonesian army. As the rest of the world and the UN watched helplessly, more than 200,000 East Timorese were forced to leave their homeland; nearly 50,000 people were shipped to militia-run camps in West Timor, where refugees unburdened real stories of the massacres and arson attacks.

The conspiracy of the Indonesian army to hijack the results of the referendum stirred up a hornet's nest around the world. US President, Mr. Bill Clinton announced the suspension of all military sales to Indonesia and even threatened a review of the economic ties with Jakarta if the latter continued to scuttle the UN moves to send a multinational peacekeeping force to safeguard the lives of East Timorese and cry a halt to the orgy of violence unleashed by the pro-integration militia. While aid agencies feared that more than 7,000 of East Timorese had already been killed, the Indonesian government dilly-dallied on the international pressure for a UN force to restore order in East Timor. At long last the Indonesian President agreed on September 12, 1999 to the proposal for a UN Peacekeeping Force in East Timor.

Led by Major-General Peter Cosgrove of Australia, the International Force for East Timor (INTERFET) started arriving in Dili, the East Timorese capital, from September 20 to carry out "Operation Stabilise".

On September 29, 1999 Indonesia allowed the UN to undertake civilian duties in East Timor. With water, electricity and sanitation and telecommunications in shambles, the UN has been keen to restore normal life.

The UN admits that it would take more than \$ 100 million in the next six months to rebuild the shattered lives of hundreds of thousands of East Timorese.

Uncertain of the future, the independence crusader, Mr. Xanana Gusao is contemplating a

provisional government-in-exile in Australia as first step towards his eventual goal of shuffling bas to Dili. Meanwhile, UN officials and top Indonesia military officers signed a border operations pact (November 23m 1999) between East and West Timor.

UN And Human Rights

Human rights are being violated the world over in countries, big and small, by the State itself and institutions supposed to safeguard them. The UN itself framed several years ago the Universal Declaration of Human Rights and on several occasions it has found itself not acting on time.

Opening the last UN General Assembly debate of the 20th century, the UN Secretary-General Mr. Kofi Annan, said on September 20, 1999 that the UN could not sit back and do nothing when gross human violations occurred, even if this meant military action. He said that if the Security Council did not act on human rights violations, none would take its directives, issued often, seriously. "If States bent upon criminal behaviour know that frontiers are not an absolute defence, if they know that the Security Council will take action to halt crimes against humanity, then they will not embark on such a course of action in expectation of sovereign impunity," said Mr. Annan.

In the politics played by the so-called big powers—the permanent members of the Security Council—they have turned a blind eye to the violations by certain States and recommended UN action where their interests were affected. The world body looked on supinely when hundreds upon thousands were massacred in Rwanda in 1994. Said Mr. Annan: "The choice must not be between the Security Council unity and the inaction in the face of genocide—as in the case of Rwanda, on one hand, and Council division, with regard to action, as in the case of Kosovo, on the other." The UN cannot afford to be "selective" where human rights are violated.

This was a point taken up by the Algerian President, Mr. Abdelaziz Bouteflika who challenged the trend towards intervention in internal conflicts in the name of human rights, saying it often ignored the economic and social roots of such crises. "When does aid stop and interference begin?" He asked: "Is interference valid only for weak or weakened States or for all States without distinction?" He said intervention should occur only with the consent of the State in question "not only because sovereignty is our final defence against the rules of an unequal world but because we are not taking part in the decision-making process by the Security Council."

The French Prime Minister, Mr. Lionel Jospin who also intervened in the UN debate said that the

UN's mission is not limited to the settlement of conflicts among States.... The mission extends to defending human dignity within each State and where necessary—as the Charter permits—against States."

Meanwhile, India has strongly criticised the rising interventionist impulse under the pretext of defending human rights and warned that it runs the danger of exacerbating conflicts, between and within nations. Reacting to UN Secretary General's plea for military action by nations or groups of nations without UN authorisation, India's permanent representative to UN, Mr. Kamlesh Sharma stated, "It is clear that emergence of a principle of armed intervention to redress humanitarian issues would set the world on a perilous slope; in principle at least there would be no limits to it."

Berlin Regains Glory As The Capital Of Germany

The journey from the sedate and somnolent Bonn to the brave new world of a vibrant Berlin could bring up a lump of nostalgia. It was indeed a journey back into the past and a journey forward into the future when the German Chancellor, Mr. Gerhard Schroeder, shifted the capital of United Germany from Bonn to the historic Berlin after a long 54 years. The German Parliament was shifted to Berlin in July 1999 and the office of the Chancellor during the last week of August 1999. Now Berlin ranks along with other European cities in political and economic importance : Moscow, capital of Russia, Brussels (the headquarters of the European Union and NATO), Paris, London and Rome. The post-1989 United Germany of over 80 million citizens is now the third largest economy after US and Japan. It is an all-consuming German ambition to make Berlin the leading city of Europe in the coming years. The return to Berlin also symbolises the urge of Germans to come to the centrestage of world politics and world economy.

The German government has spent \$ 13 billion to give a facelift to their new capital of 3.1 million people.

Ethnic Indian S. R. Nathan Becomes President of Singapore

On the conclusion of the six-year term of President Ong Teng Cheong, Mr. Sellappan Ramaniathan of Indian origin, born in Singapore, took over as the new President of Singapore on September 1, 1999. This is the second time an ethnic Indian has become the President of Singapore after Mr. Devan Nair.

Indians form only 7 per cent of the population of Singapore. The major ethnic groups are the Chinese and Malay.

The 75-year old President, a former civil servant, diplomat and social worker, is the second person to become the President of the City-State after the post became an elective one.

Arafat And Barak Restart Peace Process

Breaking with the past when his predecessor, Mr. Benjamin Netanyahu, did everything possible to stoke the fires of mistrust between the Arabs and Jews, the new Israeli Prime Minister, Mr. Ehud Barak, took the bold initiative of signing an agreement with the Palestinian President, Mr. Yasser Arafat on September 5, 1999 at Sharm-El-Sheikh in Egypt infusing new life into the moribund Wye agreement. The solemn ceremony held at the Red Sea resort in Egypt was graced by the presence of a trio who had all along expressed their eagerness to end the deadlock in West Asia : the US Secretary of State, Ms. Madeleine Albright, Egyptian President, Mr. Hosni Mubarak and Jordan's King Abdullah.

The accord was Mr. Barak's first since he took over in July 1999 pledging to seek peace with the Palestinians, Syria and Lebanon. It provides for the implementation of a modified version of the interim Wye land-for-security agreement and gives the parties a year to negotiate a final peace settlement.

The agreement sets the term for three Israeli withdrawals from the West Bank between September 1999 and January 2000. It offers Palestinians more prisoner releases, clearance to open Gaza seaport and a safe passage from Gaza to the West Bank. As per the agreement, Israeli and Palestinians will complete by February 15, 2000 a "framework agreement" on some of the most hotly issues in the Arab-Israeli conflict such as Jerusalem, the future of Palestine refugees, the future of Jewish settlement and the borders and status of the Palestinian territories. Under the terms of their new peace plan, Palestinians will not unilaterally declare an independent state until at least September 2000.

Meanwhile, Israeli Parliament approved (September 9, 1999) Prime Minister Ehud Barak's new peace plan (54-23) deep to security risks and heartbreak over giving parts of the Biblical land of Israel. (Earlier the same day, the Knesset had voted (17-1) to approve the first stage of the agreement—the handing of some parcels of the West Bank to Palestinian civilian authority by week-end.

Israel also released 107 Palestinian captured prisoners carrying out the first stage of the peace

peace deal. The releases coming a day ahead of the deadline were the first concrete evidence, after a nearly a year of deadlock, that Israel-Palestinian peace making is back to track.

The Israeli Prime Minister is also keen to reinstate the Lebanese-Israeli and Syrian-Israeli tracts of the process involving Israeli withdrawal from Southern Lebanon and Golan Heights with a view to achieving a comprehensive peace in West Asia. However, the real test for him would be how his government moves on the flurry of settlement activities in and around the occupied East Jerusalem. A deadlock over transfer of land between Palestine and Israel has presently stalled the peace process.

Space For Peace

Unitedly, mankind can put the frontiers of outer space to the benefit of all. This was the essence of the exhortations made by delegates at the third United Nations Conference on Exploration and Peaceful Uses of Outer Space (UNISPACE III) held in Vienna on July 19, 1999.

The Conference elected the former Chief of ISRO, Prof. U.R. Rao who is currently the Chairman of the UN Committee on the Peaceful Uses of Outer Space as the President of the Conference. In his presidential address, Mr. U. R. Rao appealed for international cooperation to "achieve improved standard for all, better protected and managed ecosystem and a safe and more prosperous future". Testimony to India's pre-eminent positions in space technology has been provided by the recognition given by the UN to the eminent Indian space scientists. While Vikram Sarabhai virtually presided over the 1968 UNISPACE conference, UNISPACE II was presided over by Prof. Yashpal in 1982.

Addressing UNISPACE III, the UN Secretary-General, Mr. Kofi Annan, made a passionate plea to member nations not to make the expanse of space a battleground of earthly conflicts. He said that this century had seen unparalleled success and progress in science and technology, the pinnacle of which being the birth of space technology that helped man finally realise the dream of venturing beyond Earth. Exploration of space has yielded a bonanza for the entire humankind: the ushering in of the satellite age, prediction of natural disasters more accurately and the monitoring of global phenomena like climate change.

The UN Secretary-General said that space can also be used for developing innovative agricultural techniques needed in these regions of the world where people still go hungry, even while the world has the technology to feed itself many times over.

Among other uses of space technology were the detection of land-mines and that of the cultivation of plants used to make illicit drugs.

UNISPACE III celebrated the 30th anniversary of man's landing on moon with all characteristic grandeur in the presence of veteran astronauts and cosmonauts. The most striking phenomenon the astronauts felt was of "one humanity". They saw Earth from space as a tiny blue ball, so small and insignificant in size, compared to other celestial bodies. Away from Earth, the astronauts realised the grandeur of man and the futility of frivolous divisions found in human beings. Answering a query on the possible hazards of the militarisation of space, the Canadian astronaut, Chris Hadfield, asked politicians to make a space trip once to clean their minds of all the dirt amassed on Earth. The woman astronaut from Japan, Chiaki Mukai, asked women astronauts to take to jobs in the space arena.

Mahendra Chaudhry : New Prime Minister Of Fiji

The mills of God grind slowly, but they grind exceedingly small and that was the case in the change of guard in Fiji. Exactly twelve years ago when an Indian-dominated government came to power, a former Army colonel, Sitiveni Rabuka triggered a coup to pull down a legally elected government. And in multi-racial societies, a few bully their way to the throne and the alarmed Indian community that was about to outnumber the local Fiji population developed cold feet. There was a flight of fear and a few Indians migrated to other countries for new pastures even as the economy under a racist regime was fast crumbling. But the Fiji Labour Party under Mr. Mahendra Chaudhry did not lose hope and waited with stoic patience for better days to come (37 out of 71 seats in Parliament). The new pragmatic PM has more Fijians (11) than Indians (7) in his Cabinet.

And it did come as nemesis for Mr. Rabuka and a reward for long-standing patience for Mr. Mahendra Choudhry who returned to power with a comfortable majority.

In a span of 12 years Mr. Rabuka did enough to stoke the flames of ethnic hatred. He redrafted the Constitution just to prevent an Indian-dominated party from having a decisive say in the running of the government. A Constitution that sought to treat the Indian minority that forms 44 per cent of the 800,000 population as second class citizens had a boomerang effect when a huge capital outflow crippled the Fijian economy. Once Mr. Rabuka mended ways and democratised institutions, Fiji was allowed to return to the Commonwealth and

other international bodies from which it was expelled when racial hatred was inflamed after the coup.

Scotland Elections Mark A New Era

The Labour Party swept the polls in Scotland's historic vote for its first Parliament in three centuries pushing behind the ambitions of the nationalists who wanted a break of the United Kingdom. Labour won 53 seats and 38.8 per cent of the vote in the election results declared on May 7, 1999, compared to seven seats and 28 per cent of the vote for the Scottish National Party.

This was their first election for a democratic parliament for Scotland for nearly 300 years.

In a high-stakes election for the British Prime Minister Tony Blair, Labour grabbed the biggest share of seats in the new body, but looked sure to fall short of an outright majority that would have allowed Labour to rule without a coalition.

The results confirmed that a majority were content, cheerful with the degree of self-government within the United Kingdom. Scotland's Parliament will have power over areas like education, health and law and order and the right to raise taxes while London's Parliament will keep control of foreign affairs, defence, economy, energy and road transport.

The three million people of Wales also voted for a separate, but less powerful assembly.

Nepal : A Pause In Coalition Politics

Coalitions anywhere in the world, including India and Nepal, provide the worst recipe for instability. India has learnt it at a great cost at the Centre in the last four years and decades earlier in the fragile coalition experiments in West Bengal and Kerala. When the coalition partners put their petty ambitions above the vital need of smooth governance, the coalition collapses. This bane has stalked the coalition politics in the Himalayan Kingdom of Nepal too. But this time when the electorate in Nepal was asked to give a choice in the elections to the Pratinidhi Sabha or the Lower House of Parliament, they gave a different verdict: the return to power of the Nepali Congress after the bizarre merry-go-round of as many as six coalitions lacking the dust in a span of five years after the elections in 1994.

The patriarch of Nepali Congress, Mr. Krishna Prasad Bhattarai has become the new Prime Minister of Nepal.

Like the Congress in India, the Nepali Congress is the oldest party in Nepal having taken on the Rana regime and the partyless Panchayat System

in the third Parliamentary elections since 1990, when multi-party democracy dawned in Nepal, the Nepali Congress won 111 of the Sabha's 205 seats. A split in the Communist Party of Nepal swelled the ranks of supporters for the Nepali Congress. Added to this was the sudden death of Manmohan Adhikari, the veteran Communist leader and founder of the Communist movement in Nepal during the period immediately preceding the elections.

In the 50s, Mr. Bhattarai spearheaded a revolt against the Rana family that ruled Nepal for more than a century. He was one among the many leading figures who fought for multi-party democracy in Nepal, a goal that was achieved in 1990. For championing the cause of democracy, Mr. Bhattarai was imprisoned more than once.

SAARC Meet In Nuwara Eliya

The winds of change in the Indian sub-continent, more broadly in the entire South Asia as a result of the summit meeting between the Prime Ministers of India and Pakistan were being felt by the Secretaries and Ministers of the seven member-countries of the SAARC, who met at the Sri Lankan hill station of Nuwara Eliya during the third week of March 1999.

Though the SAARC Council of Ministers discussed a wide range of common issues like the steps leading to SAFTA (South Asian Free Trade Agreement) and vital development and social issues concerning the region, the members lauded the efforts of India and Pakistan to sort out outstanding bilateral problems in a spirit of mutual understanding, as was evident in the Lahore Declaration. The SAARC meeting also provided a forum for the Foreign Ministers of India and Pakistan to reinforce the foundation of the Lahore Declaration made just weeks ago.

The Nuwara Eliya meeting reiterated that the goal of SAARC was to create a free trade area where there would be no tariff or non-tariff walls coming in the way of the free flow of goods from one country to another. The ultimate goal is the creation of a single economic union comprising SAARC countries by the year 2020. In the meanwhile, a timeframe has been set for drawing up the South Asian Free Trade Agreement (SAFTA) by 2001. The target date for implementing trade treaty is 2008 by India, Pakistan and Sri Lanka and by 2010 by the other four countries. SAFTA would take into account the special needs of the least developed countries. On the economic side, thrust would be given to joint ventures. India is encouraging its entrepreneurs to invest in SAARC countries. Indian investment in South Asia has

markedly increased from \$4 million to \$15 million in the course of a single year.

NATO : Surging Eastward

It was a day to remember for all and it was a place etched in memory. Day : March 12, 1999 and place : Independence in Missouri, USA. And the place and the event that marked the day had associations with celebrities past and present : Harry S. Truman, Winston Churchill, US Secretary Madeleine Albright and the Foreign Ministers of Poland, Hungary and the Czech Republic. At an impressive ceremony at the Harry S. Truman Library at Independence in Missouri, three ex-Warsaw Pact countries—Poland, Hungary and the Czech Republic—were ushered in as the official members of the NATO (North Atlantic Treaty Organisation).

NATO was founded during the Truman Presidency 50 years ago on April 4, 1949, to counter the Communist threat. There were 12 original members of NATO at the time of its founding : Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, UK and USA. Greece and Turkey joined NATO in 1952, Germany in 1955 and Spain in 1962, raising its membership to 16. The new additions in March 1999 bring the total to 19, and many others like Slovenia, Romania, Bulgaria, Slovakia, Lithuania, Estonia and Latvia are waiting in the corridors for entry into the North Atlantic Alliance.

With the latest expansion, NATO has stretched its border 400 miles to the east, creating new frontiers with Belarus, Ukraine, Lithuania, Slovakia and Romania. For the first time, the NATO has taken a commitment to defend all the new ex-Communist members. It is committed to protect Hungary to which it has only air links, due to Austria's neutrality, and Slovakia's failure to qualify for membership. Under Article 5 of the North Atlantic Treaty, an attack on any member of NATO is deemed an attack on all. Accordingly, Poland, Hungary and the Czech Republic now come under NATO's nuclear umbrella, and will be able to call on its land and air forces. To the Poles, NATO's expansion may mark the end of a nightmare spanning ten centuries that saw them the victims of one bloody territorial aggrandisement after another during which Poland twice vanished from the map of Europe altogether in 1795 and 1939.

Poland, Hungary and the Czech Republic have already gone in for Western political and economic values in the form of multi-party democracy, free market economy and governance based on the rule of law. But militarily and technologically, all the three countries carry the burden of dependence on the outmoded Soviet style of thinking. It may take

several years for the military establishments of the three new members to come up to the standard of the other 16 members.

The Birth Of Euro

"We cannot be separated in interest or divided in purpose. We stand together until the end." What Woodrow Wilson said several years ago was implemented right to the spirit of the law by eleven European countries—Germany, France, Austria, Belgium, Finland, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain—whose sustained perseverance and patience ushered in the much-awaited Euro, the single currency of Europe—on the New Year Day on January 1, 1999. The launch of EMU (European Monetary Union) was described as the most ambitious monetary experiment since the launch of the Brettonwoods System at the end of the Second World War. At the chime of midnight bells in Brussels, these eleven European countries left behind their distinctive currency identities to launch a currency, single and common to all, challenging the mighty US dollar. As eleven currencies got locked to Euro, Britain, Sweden, Denmark and Greece chose to remain on the sidelines. The 290 million people of Euroland—as the eleven countries wedded to Euro are now being addressed—will, however, have to wait for three years before they can hold new Euro notes and coins.

Around 50 billion coins and 13 billion notes will be needed to replace existing currency.

In the meanwhile, Euro has already appeared on bank accounts, travellers cheques and on plastic cards. Pending the appearance of hard cash in October 2001, the national currencies of the 11 members of EMU will continue in circulation.

Existing national central banks, such as the powerful German Bundesbank, will continue to exist, in effect, as branches of the European Central Bank, which will from now onwards manage the future of Euro. The national banks will transfer 50 billion Euro (\$58.38 billion) in reserves to the Central Bank.

Nigeria : Return To Civilian Rule

Nigeria's first free presidential elections after 15 years of military rule brought down the curtain on rule by the military junta in Africa's most populous country. By a strange coincidence former military general Olusegun Obasanjo, who voluntarily surrendered military rule to elected civilians for the first time in 20 years, was himself elected as the new civilian President of Nigeria. Gen. Obasanjo's

Centre-left People's Democrat Party won the elections to the National Assembly on February 20, 1999.

The retired general won 57.5 per cent of the votes cast, taking 2.71 million out of the 4.71 million. His rival, former Finance Minister, Mr. Olu Falae, was on the 42 per cent mark, with 1.98 million votes. Gen. Obasanjo won in the federal capital, Abuja, in Abia, Akwa-Ibom and Imo states in the

east of the country and in Jigawa and Nassarawa states in the north. Falae won in Oyo state in the south-west and Sokoto state in the north.

Nigeria is well set to return to the international community after years as a pariah following the execution of the Ogoni rights activist Ken Saro-Wiwa and other human rights abuses under the dictatorship of General Sani Abacha. The new President of Nigeria assumed office May 29, 1999.

Diary Of Events — INTERNATIONAL

JANUARY 1999

1 : 11 members of 15-strong European Union (barring UK, Greece, Denmark and Sweden) launch a new common currency, Euro at Brussels. The Euro 11 members are : Germany, France, Austria, Belgium, Finland, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

* Mr. Nihal Rodrigo, Sri Lankan diplomat, takes over as Secretary-General of SAARC.

3 : BBC radio poll names William Shakespeare as "Man of the Millennium".

* US Vice-President, Mr. Al Gore is the first official Democratic candidate for the 2002 Presidential race.

* A robot Polar Lander takes off from Cape Canaveral on a 11-month water probe of the Mars.

7 : UN Secretary-General, Mr. Kofi Annan denies any knowledge of UN arms inspectors' role in alleged spying for US.

9 : A leading US think tank, Freedom House, identifies "pluralistic" India as the only "free" country in South Asia, while Pakistan, Sri Lanka, Nepal and Bangladesh are termed "partly free".

12 : According to NASA, 1998 was the hottest year on record, with average global temperature warmer by 0.16°C than the previous record in 1995.

18 : UN Secretary-General calls for end of UN peace-keeping mission in Angola as the peace process has collapsed in the war-ravaged country.

24 : Toughest US-Russian dialogue begins on abrogating/amending the 1972 Anti-Ballistic Missile Treaty, a cornerstone of arms control.

26 : Steven Spielberg's war movie *Saving Private Ryan* wins Hollywood Foreign Press Association's Golden Globe Award for best drama, naming for Spielberg the prize for best director. Gail Blanchett bags the Gilded Orb as best actress for her role in Shekhar Kapur's historical drama, *Elizabeth*.

30 : Pakistan won't sign CTBT nor accept unilateral moratorium on the production of fissile material, till sanctions, including embargo on

military sales, are lifted, asserts Pak. Foreign Minister.

31 : Eighth round of Indo-US post-Pokhran talks end on a positive note in New Delhi paving the way for "broad-based ties".

FEBRUARY 1999

2 : China rejects Russian PM's proposal made during his December 98 visit to New Delhi for "strategic alliance" between Russia, India and China.

3 : Inaugurating the two-day SAARC Commerce Ministers meeting at Dhaka, Bangladesh PM, Sheikh Hasina Wajed calls for intra-SAARC co-operation in the fields of hydro-power, communication, infrastructure, sea port development, gas and energy.

7 : King Hussein (63) of Jordan dies after a seven-month battle against cancer. His son, Crown Prince Abdullah is proclaimed King.

10 : Jamaican Prime Minister, Mr. P.J. Patterson opens the G-15 meet at Montego Bay with a fervent call for restructuring international lending institutions and more say for developing countries.

11 : Britain proposes to triple the recruitment of black and Asian people in the country's police force with a national target of 7 per cent, in order to improve race relations.

12 : Israel vows to stall Wye Accord implementation unless the Palestinian authority cracks down on terrorist groups.

16 : Turkish Prime Minister, Mr. Bulent Ecevit announces the arrest of Mr. Abdula Ocaltan, fugitive leader of the Kurdish Workers Party, in an undercover operation.

17 : Pakistan's Supreme Court declares the setting up of military courts by PM Nawaz Sharif to dispense quick justice in terrorism-related cases in Sindh and elsewhere as "unconstitutional" and sets aside all sentences passed by these courts.

18 : American film star Shirley Maclaine is presented a Golden Bear Lifetime Achievement Award at the 49th Berlin Film Festival.

20 : India's Prime Minister, Mr. Atal Behari Vajpayee, along with other dignitaries and personalities from different fields, is received by Pakistan's Prime Minister Mr. Nawaz Sharif at the crossing of the Wagah border.

★ Nobel Laureate and Bharat Ratna Prof. Amartya Sen is appointed Human Development Adviser for the United Nations Development Programme (UNDP).

21 : Prime Minister, Mr. Atal Behari Vajpayee and his Pakistani counterpart, Mr. Nawaz Sharif sign a Joint Lahore Declaration at the end of the two-day talks that emphasises the need for solving all issues, including Kashmir, through peaceful means.

24 : Hip Hop star Lauryn Hill breaks the record of female artists with five Grammy Awards at the 41st Annual Grammy Awards in Los Angeles.

26 : A national panel of veteran American journalists rates the bombing of Hiroshima in 1945 as the most significant news event of the century.

27 : US Congressman Frank Pallone introduces a legislation to allow entry into the US of the spouses and children of the "Green Card" holders residing and working in the United States.

28 : US Supreme Court rules that its citizens and its legal aliens have the right of free speech while the illegal aliens do not have this right.

MARCH 1999

1 : Gen. Olusegun Obasanjo declared the new civilian President of Nigeria, 20 years after he held power as military ruler.

3 : Leaders of the Developing Eight, popularly known as D-8—comprising Bangladesh, Egypt, Indonesia, Iran, Malaysia, Nigeria, Pakistan and Turkey—all members of the Organisation of Islamic Conference (OIC) conclude their second summit in Dhaka. The group was formed in Istanbul in June 1997.

12 : Former Warsaw Pact countries, Czech Republic, Hungary and Poland join the North Atlantic Treaty Organisation (NATO).

16 : Norway becomes the first NATO country to appoint a woman Defence Minister, Ms. Loewer, previously Minister of Labour and Administration.

★ European Union goes under a caretaker administration as mismanagement and corruption leads to the resignation of the entire European Commission.

18 : SAARC Foreign Ministers conference begins at Sri Lanka's Nuwara Eliya hill resort.

19 : India and Bangladesh agree to demarcate 6.5 kms of the unmarked border and to take steps against militants running camps on either side of the border.

22 : Hollywood romantic comedy *Shakespeare in Love* wins seven Academy Awards including best picture and best actress for Gwyneth Paltrow while Steven Spielberg's World War II epic *Saving Private Ryan* wins the award for direction and four other Oscars. Shekhar Kapur's *Elizabeth* wins an award for make-up.

24 : NATO launches air strikes on Yugoslavia.

25 : AIDS vaccine trial launched in Thailand.

30 : South Africa ratifies Nuclear Test Ban Treaty (NBT).

APRIL 1999

2 : Ms. Sheikh Hasina Wajed, Bangladesh Prime Minister and US Senator George Mitchell are selected for the 1998 UNESCO Peace Prize.

★ Russian Parliament Duma shelves indefinitely the ratification of a key nuclear disarmament treaty START II because of NATO airstrikes on Yugoslavia.

5 : UN curbs on Libya lifted.

6 : US to continue sanctions against Libya.

7 : Prof. Ennio Candotti (Brazil) and Ms. Regina Paz Lopez (Philippines) are jointly awarded the 1998 UNESCO Kalunga Prize for Popularisation of Science in New Delhi.

11 : Shekhar Kapur's directorial venture, *Elizabeth* bags five British Film Academy Awards in the categories of Best British Film, Best Actress (Cate Blanchett), Best Cinematography and Best Make-up and Best Film Music.

12 : Israel develops long-range *Jericho* missile.

14 : Pakistan test-fires the 1500 km-range *Ghauri-II* missile two days after India had test-fired its advanced range *Agni-II* ballistic missile.

15 : Pakistan test-fires a surface-to-surface missile *Shaheen* with a range of 600 km and capability of carrying a nuclear warhead.

16 : Russia's Parliament, Duma votes for admitting Yugoslavia into the Union of Russia and Belarus.

17 : A US navy destroyer, named after the former British Prime Minister Sir Winston Churchill, launched.

19 : India's well-known Hindustani Classical singer Pandi Jasraj conferred the Distinguished Visitor Award by the University of Toronto's Faculty of Music.

26 : Sultan Salahuddin Abdul Aziz Shah (73) is sworn in as Malaysia's 11th king under a five-year rotational system.

27 : Indonesian President, Mr. B.J. Habibie announces a UN-sponsored elections in East Timor to be held on August 8, 1999.

30 : Australian author Murray Ball awarded the 1999 Commonwealth Writers' Prize for his novel *Eucalyptus* in Wellington.

★ Cambodia is formally admitted as the 10th member of the Association of South-East Asian Nations (ASEAN). The other nine members are : Thailand, Malaysia, Singapore, Indonesia, the Philippines, Brunei, Vietnam, Myanmar and Laos.

MAY 1999

2 : Ms. Mireya Moscoso, widow of a former Panamanian President, Arnulfo Arias, becomes the first woman President of Panama.

5 : Prof. Ian Wilmut, the scientist who created Dolly the sheep, the world's first mammal cloned from an adult cell, strikes a million-dollar deal with a Californian company Geron to work on human cloning.

7 : Britain's ruling Labour Party claims victory in Scotland's historic parliamentary elections in three centuries giving a jolt to nationalists seeking break-up of the United Kingdom.

12 : Russian President Mr. Boris Yeltsin sacks Prime Minister Mr. Yevgeny Primakov and appoints Interior Minister, Mr. Sergei Stepashin as new Prime Minister.

16 : Kuwait's Cabinet grants women the right to vote and run for Parliament.

19 : Mr. Ehud Barak elected the new Prime Minister of Israel; Mr. Mahendra Chaudhry an ethnic Indian is the new Prime Minister of Fiji.

23 : The Federal Assembly in the recently-refurbished Reichstag votes for Mr. Johannes Rau as Germany's eighth post-war President.

★ Indian director Murali Nair's *Marana Simhasanam* wins the Golden Camera Award at the prestigious Cannes International Film Festival in France. Palme D'Or Prize for best film goes to *Rosetta* by Belgian directors Luc and Jean-Pierre Dardenne.

26 : Ms Mpulo Kwelagobe, the 19-year-old Miss Botswana crowned Miss Universo 1999 at Chaparramas, Trinidad and Tobago.

29 : General Olusegun Obasanjo sworn in as Nigerian President, ending more than 15 years of military rule in Africa's most populous country.

30 : Two US astronauts, Tamara Jernigan and Dan Barry complete historic space walk outside the international space station, laying the groundwork for future construction of the orbital laboratory.

31 : The 75-year-old Nepali Congress leader Mr. Krishna Prasad Bhattarai is sworn in as Prime Minister of Nepal.

JUNE 1999

1 : Mr. Francisco Flores, 39, the Rightist Nationalist Republican Alliance leader, is sworn in as the 34th President of El Salvador.

★ Mr. Sanjaya Rajaram, an Indian wheat scientist, is conferred China's Friendship Medal, the country's top award for a foreigner, for his contribution to Beijing's agricultural sector.

★ The Council of Chief Designers of the Russian Space Agency votes to sink the Russian Space Station *Mir* in the Pacific latest by March 2000. The current crew at *Mir* will leave in August 1999.

3 : Yugoslavia accepts a peace plan for Kosovo put to Yugoslav President, Mr. Slobodan Milosevic by Russian and EU envoys.

★ Sir Christopher Cockerell, the inventor of the hovercraft, dies at the age of 88 in England.

6 : Russia celebrates its legendary writer Alexander Pushkin's birth anniversary.

8 : The United States firmly rejects Pakistan's contention that the Line of Control (LoC) in Kashmir was not clear and asks the Pakistan-backed infiltrators to go back.

10 : Peace breaks out in Kosovo as President Slobodan Milosevic 'surrenders' after 78 days of NATO bombing. The historic peace deal is signed in a tent in Kumanovo, close to the Macedonian-Kosovo border.

★ The US Senate approves an amendment moved by Republican member Sam Brownback to suspend nuclear-related sanctions against India and Pakistan for five years.

12 : NATO troops advance by land and air into Kosovo to ensure safe return of nearly a million ethnic Albanian refugees.

★ Pakistan announces an almost 11 per cent hike in defence expenditure in its budget for 1999-2000.

13 : Indonesia's ruling Golkar Party, that posted landslide victories in the past six general elections held under former President Suharto concedes defeat in the first post-Suharto elections.

★ Voters in 11 European Union countries go to polls in the final day of elections for a new European Parliament.

16 : Mr. Thabo Mbeki takes over as post-apartheid South Africa's second president.

18 : Ms. Vaira Vike-Freiberga, a Canadian-Latvian academic, wins Latvia's presidential election.

19 : NASA launches its 870-kilo quick scatterometer satellite - QuikSCAT, that would play a vital role in helping to predict global weather changes.

20 : In a major disappointment to Pakistan, on the final day of the summit in Cologne (Germany), the G-8 leaders maintain that LoC is sacrosanct.

21 : The 11th Panchen Lama, Erdem Losang Gamba Iltuzhub Gelyigzhuu nominated by China,

returns to Xigaze city in Tibet autonomous region.

★ The United Nations special envoy on East Timor, Mr. Jamsheed Marker visits Jakarta (Indonesia) to discuss the holding of UN-sponsored vote on self-determination scheduled for August 8.

22 : Mr. Najam Sethi, a renowned Pakistani journalist and editor of *Friday Times*, is chosen for the 1999 Amnesty International "Special award for human rights journalism under threat."

★ China achieves a major breakthrough in cloning the endangered giant panda. The Chinese Academy of Sciences (CAS) says the embryo was grown by introduction of cells from a dead female panda into the eggs of a Japanese white rabbit.

★ The United Kingdom supports India's stand on the Kargil war saying a solution to the crisis can come about after the withdrawal of Pakistani intruders from the Indian side of the LoC.

24 : Pakistan threatens to use the nuclear option against India as an ultimate weapon, if the circumstances arise.

25 : Gen. Anthony Zinni, the Commander-in-Chief conveys the US President, Mr. Bill Clinton's message to Pakistan Prime Minister Mr. Nawaz Sharif asking Pakistan to withdraw armed intruders from the Indian side of the LoC.

★ Britain rejects expert's advice to clone human embryos for the production of tissue for transplants and for other medical treatments.

27 : Islamabad sends secretly former Foreign Secretary, Mr. Niaz Naik as its special emissary to New Delhi with a set of new proposals to resolve the Kargil crisis.

28 : China braces to test a new mobile intercontinental ballistic missile built by using allegedly stolen US warhead and missile secrets.

29 : Estonia, the Micronesia Federation, Nigeria, Sudan and The Vatican join the International Convention Against Chemical Weapons which was opened for signatures in January 1993 accepted by 126 countries so far.

★ Turkey's rebel Kurdish leader Abdullah Ocalan is sentenced to death after being found guilty of treason and attempting to break up the country.

JULY 1999

3 : Mario Puzo, the author of the world-fame novel *The Godfather* which was later turned into series of blockbuster films, dies at his Long Island Home in New York.

4 : The Liberals raise their strength significantly in the Kuwait's general elections to the 50-member National Assembly.

5 : The US President, Mr. Bill Clinton and Pakistan's Prime Minister Mr. Nawaz Sharif issue a

joint statement stipulating that Pakistan agrees to (i) withdraw from the Indian side of LoC in Kargil and the adjoining sectors (ii) respect the LoC in accordance to the spirit of the Shimla Agreement of 1972 and there will be a ceasefire only after the Pakistani pullout from the Indian side of the LoC.

6 : Russian troops arrive in Serbia to join the NATO-led peace-keeping forces in Kosovo.

7 : The United States imposes financial and other commercial sanctions on the Afghan Taliban for supporting Osama bin Laden, a Saudi-exiled terrorist and his network.

8 : Britain restores diplomatic ties with Libya after 15 years which were severed in 1984's shooting of a British policewoman outside Libya's London Embassy.

10 : Afghanistan's Taliban movement rejects The United States' demand to extradite Saudi-exiled Osama bin Laden to the US to be tried for the bombing of US embassy in Africa killing more than 250 people.

16 : Microsoft Corporation, the mega software company owned by Bill Gates, the world's richest individual, ends up with a market value of \$507 billion, the first time any company has passed the half-trillion mark.

★ Israeli Prime Minister, Mr. Ehud Barak and the US President, Mr. Bill Clinton set for the first time a target date—November 2000—for the conclusion of peace deals with Lebanon, Syria and Palestinians.

17 : Russia successfully launches the Zenit-2 rocket carrying the Russian-Ukrainian satellite Okean-o from the Baikonur Cosmodrome in Kazakhstan. The satellite will help scientists monitor both the oceans and ice services covering the earth's pole.

18 : Progress M-42, the supply transporter docks successfully with the Russian space station Mir.

20 : World celebrates the 30th anniversary of the first landing by man on the moon.

21 : Ms. Shanthi Ranganathan, an Indian social worker, is conferred the UN Vienna Civil Society Award by the UN Secretary General, Mr. Kofi Annan, for her superb work for fighting drug abuse.

23 : The space shuttle *Columbia* commanded for the first time by a woman Col. Eileen Collins blasts off into space from Cape Canaveral, Florida. The space shuttle will place into orbit the Chandra X-ray observatory (named after India-born astrophysicist Nobel Laureate Dr. S. Chandrasekhar), on a five-year mission to examine the most powerful sources of X-rays in the Universe.

25 : The world renowned Indian Sitar maestro, Bharat Ratna Pandit Ravi Shankar is conferred the

coveted International Prize for Film and Media Music for 1999 by the Art and Exhibition Centre of Germany.

28 : India reiterates its offer to endorse the treaty to make South-East Asia a nuclear weapon-free zone at the annual ASEAN Regional Forum (ARF) in Singapore.

* The British customs officials intercept Pak-bound cargo unloaded from a ship coming from the USA at the Thames Port. The shipment contained 20 tonnes of components vital for producing nuclear warheads.

26 : Ramon Magsaysay Awards for 1999 announced; Mr. Tasneem Ahmed Siddiqui (Pakistan) selected for *Government Service*, Ms. Rosa Rosal (Philippines), for *Public Service*, Ms. Angela Gomes (Bangladesh) for *Community Leadership*, while Mr. Lin Hwai-Min (Taiwan) and Mr. Raul Locsin of Philippines share the award for *Journalism, Literature and Creative Communication Arts*.

28 : Global emissions of carbon from the combustion of fossil fuels have come down from 6.37 to 6.32 tonne, according to new estimates released by the World Watch Institute.

30 : Bangladesh approves an Indian proposal for transshipment of Indian goods through its territory.

* US agrees to pay \$4.5 million as compensation to the relatives of the dead and injured US officials hit by NATO's bombing of the Chinese embassy in Yugoslavia.

31 : The US Satellite *Lunar Prospector* slams into the moon in an attempt to confirm the presence of water there.

AUGUST 1999

1 : Microsoft billionaire Mr. Bill Gates plans to donate \$65 billion (\$100 billion) to the William H. Gates Foundation to rid the world of AIDS and Malaria.

6 : According to a Conventional Arms Transfers to Developing Nations 1991-1998 report, the US emerges the global leader in arms dealings selling (\$7.1 billion) around the world. Germany occupies the second slot (\$4.6 billion). A big chunk of these weapons has been sold to the developing nations.

7 : Russia rushes troops to Dagestan to quell resurgent pan-Islamic Wahabi forces trying to establish Islamic rule there.

9 : Mr. Vladimir Putin becomes the new Prime Minister (Acting) of Russia replacing Mr. Sergei Stepashin.

11 : UN bans Dalai Lama's picture in its Geneva office.

13 : A network of international groups urge the USA and Russia to take nuclear missiles off hair-

trigger alert during the technology challenging year 2000 rollover, to avert the risk of an accidental war.

16 : The American magazine *Time* names Mahatma Gandhi, M.S. Swaminathan, Rabindra Nath Tagore, Tibetan Leader, Dalai Lama among the 20 Most Influential Asians of the Century.

17 : The two-day G-15 ministerial meeting (August 17-18) convened by India at Bangalore to formulate a common approach in the Third Ministerial Conference of WTO to be held in Seattle in November 1999 backs India's stand against linking of social and environmental standards with trade besides opposing the contentious issue of multi-lateral investment agreement being made mandatory etc.

19 : Fuji Bank Ltd. of Japan agrees to have an alliance with Japan's two other financial giants, Industrial Bank of Japan Ltd. and Dai-ichi Kangyo Bank Ltd. to form the world's biggest Banking Group.

20 : Nitish Upadhyaya, a 9-year old Indian boy in Britain, passes 'A' level examination meant for students twice of his age obtaining 68 per cent marks.

24 : The United Nations Information Centre in New Delhi launches its own Website (www.unic.org.in) for providing information about UN activities in India, besides general information about the UN.

26 : Mother Teresa's 89th Birth Anniversary celebrated.

27 : Chandra X-ray Observatory beams the stunning image while tracing the aftermath of the gigantic stellar explosions.

28 : The full-time crew of Russia's Mir Space Station returns to earth, bidding adieu to the 13-year old orbiter which is scheduled to be abandoned in 2000.

* The Grand Hyatt Shanghai, considered to be the world's highest hotel, located in the 88-storey Jinmao Tower, opens in Shanghai, China.

31 : China tests a mobile land-to-air missile equipped with high level of automation, accurate guide system and highly anti-interference capabilities.

SEPTEMBER 1999

1 : Mr. Sellopan Rama Nathan of Indian origin, who was born in Singapore, is sworn in as the sixth elected President of Singapore. He is the second ethnic Indian to hold the highest office after Mr. Devan Nair.

* Lord Swraj Paul, a prominent NRI and chairman of the Caparo Group, is appointed

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Chancellor of the University of Wolverhampton, England.

2 : Three University Departments of Adult and Continuing Education of India—Vikram University, Jaipur, Madhya Pradesh; Jadhavpur University, Cuttack; Gandhigram Rural Institute, Gandhigram, Tamil Nadu—are selected for the UNESCO-NLM Award '99 for their outstanding contribution to literacy.

4 : Indonesian President, Mr. B.J. Habibie, accepts the verdict as 78.5 per cent East Timorese vote for independence in the UN-organised elections.

5 : Israeli Prime Minister, Mr. Ehud Barak and Palestinian leader, Mr. Yasser Arafat sign a historic accord—the revised version of the Wye River Accord at the Red Sea resort at Sharm-el-Sheikh, Egypt to set the peace process.

9 : Israel releases 199 Palestinian prisoners ahead of schedule as a goodwill gesture following approval of the amended Wye River accord by the Israeli Parliament (Knesset).

10 : International community paid \$ 199 billion price for seven wars in the last decade of 20th century, discloses the UN Secretary-General Mr. Kofi Annan in his annual report.

12 : Edie Falco wins the Best Actress award in drama series *The Sopranos* at the Emmy Awards in Los Angeles, USA.

13 : A United States Intelligence report confirms that Pakistan has received M-11 short-range ballistic missiles from China.

14 : Three Pacific Island states of Kiribati, Nauru and Tonga are admitted to the United Nations, the membership of the UN to 188.

15 : Mr. Theo-ben Gurirab, the Foreign Minister of Namibia, is elected President of the UN General Assembly, for 1999.

* European Parliament approves its President, Romano Prodi's new 20-member executive for 5-year term.

24 : France expresses strong support for India's claim to the permanent membership in the United Nations Security Council.

25 : According to *Forbes* magazine, Mr. Bill Gates is the richest person in the United States.

* Greece and Jamaica express support for Israel's claim to the permanent membership in the United Nations Security Council.

29 : Indonesia allows the United Nations to take civilian duties in East Timor.

* A federal judge in the US sets a target date September 5, 2000 for the trial of Osama Bin Laden charged with planning to kill US nationals in the World Trade Center.

30 : Under US pressure, Pakistan puts off the test of its nuclear missile.

OCTOBER 1999

1 : Pakistan's Foreign Minister says that his country will not sign CTBT unless the US eases economic sanctions.

* China displays military might at its National Day parade in Beijing during the 50th anniversary celebrations of the People's Republic of China.

3 : Hundreds of Israelis demonstrate against the planned opening of a first Palestinian 'safe passage' route across the Jewish state.

* US Killer missile system passes test.

4 : France hands over eight upgraded Mirage-V jets to Pakistan.

6 : Chechnya declares martial law and threatens a *jihad* or holy war, against "invading" Russian forces.

* UN Under-Secretary for Management announces that unless Washington pays \$350 million to the world body before December 31, 1999 it would lose its vote in the General Assembly.

7 : International Chamber of Commerce (ICC), Paris to host the second World Chambers Congress in New Delhi in 2001.

* An Indian-born executive Mr. Rajiv Gupta becomes Chairman and CEO of the Philadelphia-headquartered Rohm and Haas Co., the third largest publicly-traded chemical company in the United States after Du Pont and Dow Chemical.

8 : The Heads of government of Britain, France and Germany urge US law-makers to ratify the CTBT.

10 : Bangladesh declares to ratify the CTBT.

12 : The Prime Minister of Pakistan, Mr. Nawaz Sharif is dismissed in a military coup by the man he had sacked earlier in the day: Army Chief General Pervez Musharraf.

13 : IMF suspends financial aid to Pakistan until democracy is restored.

14 : Twenty-Second Bird Life International World Conference and Global Partnership meeting begins at a hill side resort of Genting Highlands, outside Kuala Lumpur.

16 : Dr. Najma Heptullah, Deputy Chairperson of the Rajya Sabha, becomes the first woman to be elected as the President of Inter-Parliamentary Council of the 138-nation Inter-Parliamentary Union, in Berlin, Germany.

18 : An eight-member Commonwealth Ministerial Action Group (CMAG) suspends Pakistan from Commonwealth.

* Despite international sanctions, Afghanistan's Taliban regime refuses to hand over Osama bin Laden to the United Nations.

19 : A US communications satellite Orion-2 is placed in orbit by an Ariane rocket.

20 : Indonesia formally gives up its claim to East Timor, clearing the way for its independence.

★ People's Consultative Assembly (MPR) of Indonesia elects secular Muslim leader Mr. Abdurrahman Wahid as the country's President.

21 : Global Iodine Deficiency Disorders Day is observed in India.

★ Ms. Megawati Sukarnoputri is elected as the Vice-President of Indonesia.

22 : Russia sets terms for talks with Chechnya.

★ A major earthquake hits central Taiwan.

25 : Six-member National Security Council to govern the country is constituted by Gen Pervez Musharraf in Pakistan.

★ South African author J.M. Coetzee, wins the Booker Prize for 1999 for his novel *Disgrace*.

★ Israel agrees to open a safe passage for Palestinians between the West Bank and Gaza Strip.

26 : US President, Mr. Bill Clinton signs the fiscal 2000 Defence Appropriation Bill, giving him powers to waive remaining sanctions against India and resume arms sales to Pakistan.

27 : In an apparent coup, unidentified gunmen shoot Armenian Prime Minister Mr. Vazgen Sarkisian along with Parliament Speaker in the Parliament building.

★ Hereditary peers vote themselves out of the House of Lords after the Bill abolishing their 800-year-old right to sit in the upper chamber and make laws in Britain, was passed. (221-81).

28 : China officially brands the outlawed Falun Gong movement a cult for the first time.

31 : More than 200 people aboard Egyptian Boeing 767 die as the Cairo-bound passenger jet crashes while taking off from New York.

NOVEMBER 1999

3 : Gen. Pervez Musharraf assures a European Union mission that he would restore democracy in Pakistan.

5 : SAARC summit scheduled to be held in Kathmandu in November, 1999 is postponed.

6 : US conveys to Pakistan's military rulers that sanctions would remain in place and President Mr. Bill Clinton would not visit Islamabad until civilian rule is restored in the country.

★ Australian Opposition leader Kim Beazley concedes the defeat for a Republic proposal in a constitutional referendum.

7 : Russia celebrates the 82nd anniversary of the Bolshevik Revolution.

8 : Former Russian President, Mr. Mikhail Gorbachev receives the top German Award "Bundesverdienstkreuz" (Cross of Merit) from German President, Mr. Johannes Rau.

9 : Mr. Bill Clinton says one of his goals for the year 2000 is to ease tension between India and Pakistan.

10 : Malaysian Prime Minister, Mr. Mahathir bin Mohamad announces snap elections. Parliament to be dissolved on November 11, 1999.

★ In the US House International Relations Committee, a resolution praising India's democracy and condemning the military coup in Pakistan passed (21-4).

★ Taliban vow not to hand over Bin Laden to the US.

11 : Deposed Pak Prime Minister, Mr. Nawaz Sharif and four others charged with attempted-murder, hijacking and criminal conspiracy; may get death penalty if proved guilty.

12 : According to the National Geographic Society, Global Positioning System (GPS) satellite equipment enables scientists to re-calculate the height of Mt. Everest to be 29,035 feet, 7 feet more than the hitherto accepted 29,028 feet.

★ Commonwealth suspends Pakistan indefinitely.

13 : British explorer Sir Vivian Fuchs, who made the first surface crossing of the Antarctic, dies at the age of 91 in London.

14 : Universal Children's Day is celebrated.

15 : The Commonwealth Heads of Government Meeting (CHOGM) concludes with a demand that the UN Security Council crack down on States harbouring, training and promoting terrorists after Prime Minister, Mr. Atal Behari Vajpayee called for specific action against global terrorism. CHOGM will also reinforce Commonwealth Ministerial Action Group (CMAG) which has been recast. The Group now includes the Foreign Ministers of Australia, Bangladesh, Barbados, Botswana, Canada, Malaysia, Nigeria and the United Kingdom.

★ Mr. Koichiro Matsuura, a Japanese diplomat is sworn-in as the Director-General of UNESCO.

★ China and United States sign an agreement on China's entry into the World Trade Organisation (WTO) in Beijing.

19 : At the end of the two-day Summit of the Organisation for Security and Co-operation in Europe, in Istanbul, leaders of 54 countries including the United States and Russia adopt a charter for European security establishing the principle that conflicts in one state are the legitimate concern of all.

20 : China achieves a breakthrough in space mission launching its indigenously-made experimental unmanned spacecraft, named *Shenzhou* in space.

22 : Pakistan's military ruler Gen. Pervez Musharraf says that what had prevailed in the country so far was "sham democracy" which cannot be allowed to go on.

3. SPORTS

Round-up

Athletics

IAAF World Athletic Championships : Michael Johnson of USA became the most decorated gold medalist in the athletics world championships history by bagging a record ninth gold medal of his career in 4 x 100 m relay on the final day of the IAAF World Athletic Championships held at Seville, Spain from August 20 to August 29, 1999. Johnson now has two 200 m gold medals (1993 and 1995), four straight 400 m gold medals (1993, 1995, 1997 and 1999) and three 4 x 400 relay gold medals (1993, 1995 and 1999).

His team-mate Maurice Greene completed a hat-trick by winning his third gold in 4 x 100 m relay. Winner of 100 m and 200 m sprints golds also, Greene becomes the second man to accomplish this feat after Carl Lewis (1983 and 1987). The two athletes raised the US final gold medal tally to 11 golds, four more than in 1997. In other events, Denmark's Kenya-born world record-holder, Wilson Kipketer won his third straight world title in 800 m in one minute 43.30 seconds beating South Africa's Hezekiel Sepeng. In men's javelin throw, Finland's Aki Parviainen—world leader this year—won the title with a throw of 89.52 m. Russia's Svetlana Masterkova, the Olympic champion in 800 m and 1500 m, won the first gold for a Russian woman at the Championships by winning 1500 m in 3:59.53. In women's high jump, Inga Babakova of Ukraine won gold clearing the bar at 1.99 m. In the women's relays, the Russian quartet of Tatayana Chebykina, Svetlana Goncharenko, Olga Kotlyarova and Natalya Nazarova won the 4 x 400 m gold leaving the minor medals for the US and defending champions Germany. The next World Championships will be held in 2001 in Edmonton, Canada.

Federation Cup Athletic Championships : Asian Games bronze medallist Sunita Rani of Punjab created a national mark in the women's 1500 metres (4:08.1) on the opening day of the 5th Federation Cup Athletic Championships in Bangalore on August 7, 1999. She clipped four seconds off the previous record held by Molly Chacko (4:12.01) in 1994. In men's 1500m category, Gulab Chand of UP clocked 3:46.0, clipping 03.3 seconds of Satish Kumar's 1995 record. Anju Markose of Tamil Nadu set a new meet record with a leap of 6.27m in the long jump breaking the 1995

record of 6.25 m by Lekha Thomas. While Ramachandran of Tamil Nadu grabbed the gold with a new meet record of 45.0 seconds, breaking the previous mark of Paramjit Singh (46.21), the last meet record of the day came in the hammer throw event when Ishtiaq Ahmad of PSEB hurled to a distance of 67.41m, bettering the 1997 record of Pramod Kumar Tiwari (66.92m). Sanjay Kumar Rai of UP became the second Indian to touch the eight-metre barrier in long jump after T.C. Yohanna who had marked 8.07m. Sunita Rani set her second national set in 5000m. (15:14.4) to better her own mark of 15:54.43 set in the Asian Games in Bangkok in December 1998. Anju Markose set the new record in triple jump clearing 13.25m to eclipse the previous record of Lekha Thomas 13.26m in 1998. Sanjay Kumar Rai of Uttar Pradesh and Sunita Rani of Punjab were adjudged the Best Athletes in their respective category.

International Athletics Meet, Athens : World Champion Maurice Greene of the US broke the 100-metre world record clocking 9.79 seconds at an International Athletics meet in Athens (Greece) on June 16, 1999. The previous record of 9.84 seconds was set by Donovan Bailey of Canada on his way to winning the Atlanta Olympics final in July 1996.

International Track & Field Meet : Haile Gebrselassie of Ethiopia won the 3000m race clocking 7:26.80 leaving behind Andres Diaz of Spain at 7:46.15 at the International Track & Field Meet at Karlsruhe in Germany on January 24, 1999.

Badminton

Badminton World Championship : China's Sun Jun, won the men's singles title beating Fung Permadi of Taiwan 15-6, 15-13 in the final on May 23, 1999. It was the second gold medal in eight days for 22-year-old Chinese, who had helped China win the Sudirman Cup. In the women's singles, Dane Mette Sorensen became the first European women's single medallist at the Badminton World Championships beating the Commonwealth Champion Kelly Morgan 9-11, 13-10, 11-8.

Senior National Badminton Championships : Karnataka's Aparna Popat clinched the national women's badminton title defeating P.V.V. Lakshmi of Andhra Pradesh 11-3, 11-4 in the finals of Indian

Oil Servo 63rd Senior National Badminton Championships in New Delhi on February 10, 1999. Pullula Gopichand of Andhra Pradesh won the men's title defeating Srikanth Bakshi of Railways 15-3, 15-3 in the finals. In the men's doubles, Jaseel P. Ismail and Vincent Lobo defeated Rajeev Bagga and Vijay Deep Singh 15-10, 3-15, 15-8 while Manjusha Kanwar and Archana Deodhar of Maharashtra beat Apama Popat and Manju T. Abraham of Karnataka 11-4, 11-3.

Billiards

All-India Women's Snooker Championship: Ashwini Puranik of Indore made a final long black pot in the seventh frame to clinch the final of the All-India Women's Snooker Championship in Mumbai on May 8, 1999.

Salora National Billiards Championship: Punjab's Alok Kumar clinched the national title defeating Devender Joshi of Maharashtra 1184-992 in the Salora 65th National Billiards Championship in New Delhi on January 30, 1999.

National Snooker Championship: The Asian Games billiards gold medalist, Ashok Shandilya of Railways beat former champion Sarang Shroff 7-6 in the final of the National Snooker Championship in New Delhi on January 19, 1999.

Boxing

46th National Boxing Championships: N.G. Dingko Singh of Services retained the bantamweight title beating Zoihan Mawia of Mizoram at the 46th National Boxing Championships in Shimla on October 17, 1999. Ramanand, another boxer from Services, defended his featherweight title defeating V. Bhaskaran of the Railways in the heavyweight, Gurcharan Singh, also of Services, won the title beating Deepak Yadav of CISF. Ramanand was adjudged the Best Boxer.

Heavyweight Boxing: Mike Tyson revived his boxing career for the first time in 19 months in Las Vegas on January 16, 1999. With 10 seconds left in the fifth round, Tyson hit Francois Botha of South Africa right on the head that ended the fight at 2.59 seconds of the fifth round. It was 32-year-old boxer's first fight since June 28, 1997 after he was banned and his licence was restored on October 19, 1998.

WBC Welterweight Title: Oscar de la Hoya of Mexico knocked out challenger Patrick Charpentier of France in the final round of their fight to retain his WBC Welterweight Title at the Sun Bowl in El Paso, Texas on June 13, 1998. It was the fourth title defence for De la Hoya.

Chess

International Open Chess Tournament: Junior national champion, S. Kidambi achieved his maiden international master norm by logging 5.5 points at

the end of nine rounds after agreeing for a quick draw against his compatriot Abhijit Kunte in the International Open Chess Tournament at Biel, Switzerland. Earlier, Grandmaster Sergei Volkov of Russia clinched the Rapid title scoring a convincing victory over his teammate, IM Grischuk.

Commonwealth Chess Championship: Atanu Lahiri of India won the sixth Commonwealth Chess Championship after the end of the tenth and final round beating V. Koshy at Bikaner on April 26, 1999. The Commonwealth Women's title was won by Bhagyashree Thipsay of India, who claimed her second W.G.I. norm by drawing in just ten moves with Pakistan's Mahmooda Ladhli.

FIDE World Chess Championship: Grandmaster Alexander Khalifman of Russia became the 14th world chess champion beating his Armenian opponent Vladimir Akopian at the FIDE World Chess Championship in Las Vegas, US on August 29, 1999.

Amber Rapid and Blindfold Chess Tournament: World No. 2, Indian Grandmaster Viswanathan Anand clinched the Rapid title despite a 0.5-1.5 defeat against Vassily Ivanchuk of Ukraine and finished fourth overall, while Russian Vladimir Kramnik bagged overall honours at the Amber Rapid and Blindfold Chess Tournament at Monte Carlo on March 28, 1999. World No. 3 Kramnik won the overall title logging 14.5 points, ahead of Vasselin Topalov of Bulgaria and Alexy Shirov (14.0 points each) while Anand was fourth with 11.5 points.

Hoogovens International Grandmasters Chess Tournament: Garry Kasparov of Russia won the Hoogovens International Grandmasters Chess Tournament title after drawing his final game against his compatriot Vladimir Kramnik in Wijk aan Zee (the Netherlands) on January 31, 1999. India's Viswanathan Anand clinched a spectacular victory over Vasselin Topalov of Bulgaria to finish with 9.5 points, a close-second behind Kasparov (10).

Cricket

India-New Zealand One-Day International Series: India clinched the Pepsi One-Day International Series (3-2) defeating New Zealand by seven wickets in the 5th One-Day International in New Delhi. New Zealand—179/9; India—181/3. Man of the Match—Saurav Ganguly. Man of the Series—Saurav Ganguly, who won a FIAT SIENA Car for the second time. This is his third car prize. (Earlier he bagged an OPEL ASTRA in the Sahara Cup in 1998 and a FIAT SIENA in the Pepsi Cup Series '99 against India, Australia and Zimbabwe).

In the Second One-Day International at Hyderabad (November 8, 1999), India's 376/2 was

T.J. Matthews, also of Australia in 1912. However, Akram achieved this feat in two successive Tests against Sri Lanka on March 14, 1999 at Lahore and Dhaka respectively, while Matthews achieved this feat in the same Test. Ijaz Ahmad, who scored a double century, was adjudged Man of the Match while Akram was named Man-of-the-Series. In the same Test, Inzamam-ul-Haq also scored a double century.

India-Pakistan Pepsi Test Challenge Cup Series : India clinched a spectacular victory by a margin of 212 runs against Pakistan as Anil Kumble claimed 14 wickets in all, in the second and final cricket Test at Ferozeshah Kotla, in New Delhi on February 7, 1999. Kumble became the second player in Test history to claim 10 wickets in an innings of a Test after Jim Laker of England against Australia in 1956. He was declared Man of the Match while Pakistan's Saqlain Mushtaq was adjudged Man of the Series. Earlier in the first Test in Chennai, Pakistan defeated India by 12 runs on January 31, 1999. Sachin Tendulkar with 136 runs was adjudged Man of the Match.

Football

World Cup (Women) : The United States beat China 5-4 to win the women's World Cup soccer in Los Angeles on July 10, 1999.

Women's National Football Championship : Abhi Dev's, golden goal helped holders Manipur retain the title defeating traditional rivals Bengal in the Seventh Women's National Football Championship at Shillong on May 22, 1999. This was Manipur's fifth title triumph.

SAFF Coca-Cola Cup : India retained their SAFF Coca-Cola Cup defeating Bangladesh 2-0 in the final of SAFF Coca-Cola Cup Football Tournament at Falorda on May 1, 1999. Balchung Bhutia of India was adjudged Player of the Tournament and Man of the Final.

General

SAF Games : The Eighth SAF Games (September 25-October 4, 1999) were inaugurated at Kalmamdu by King Birendra Bir Bikram Shah Dev of Nepal. As hitherto, India notched the top position winning 197 medals including 102 gold. In athletics, Sunita Rani of India bagged three gold medals—in 10,000 metres, 5,000 metres and 1500 metres. Nisha Millet, India's Best Sports-woman in 5th National Games (Imphal: February, 1999) won seven gold medals in various swimming events breaking five records including that of her compatriot Bula Choudhary's 29.29 seconds in 50m

freestyle (set at Colombo in 1991), by timing 28.71 seconds.

In Volleyball, India clinched both the men's and women's titles. India retained the men's title defeating Pakistan 25-19, 25-17, 25-18 while its women's team won the gold beating Sri Lankans 25-21, 21-25, 25-16, 25-15. In Boxing, Asian Games bantamweight gold-medalist N.G. Dingko Singh won the gold beating Bahadur Hari of Nepal. In this category, Indian pugilists bagged six of the 12 gold medals at stake on the concluding day of the boxing events on September 30, 1999. In Weightlifting, Indian weight-lifters clinched all the eight titles on offer. In Table Tennis too, India won both men's and women's golds, beating their Pakistani counterparts by a 3-0 margin in the finals. In Football, Bangladesh clinched the gold defeating Nepal 1-0, while holders India had to be content with a bronze by beating Maldives 3-1. In women's Taekwondo, India broke Nepal's dominance with G. Malini clinching the heavyweight gold.

The 9th SAF Games will be held in Peshawar, Pakistan in 2000.

National Sailing Championships : Nitin Mongia of Naval Sailing Club, Mumbai retained the laser standard full rig title with eight points at the National Sailing Championships in Hyderabad on September 4, 1999. Lt. Cdr. R. Mahesh came second with 9 points while Rajesh Chaudhary of EME Sailing Association finished third with 18 points.

SEA Games : Thailand became the champions of the 10-nation South East Asian Games (SEA) in Bandar Seri Begawan, Brunei on August 15, 1999. The next SEA Games will be held in Kuala Lumpur, Malaysia in 2001.

World Indoor Athletics Championships : American sprint king and 100-metre World Champion Maurice Greene won the 60-metre race clocking 6.42 seconds at the World Indoor Athletics Championships in Maebashi, Japan on March 7, 1999. While Haile Gebrselassie of Ethiopia clinched the seventh World title (Senior or Junior) of his career winning the 3,000 metres final. The 25-year-old Ethiopian also claimed the 1,500m final clocking 3 minutes 33.77 seconds.

Golf

Golf World Cup : Tiger Woods of the US led his country to lift the Golf World Cup defeating Spain in Kuala Lumpur on November 21, 1999.

World Golf Championship : Ace Goller Tiger Woods of the US won the American Express World Golf Championship in Valderama (Spain) on November 7, 1999.

Dronacharya Award (1998) : Bahadur Singh and Hargobind Singh (Athletics), Gurbax Singh Sandhu (Boxing) received the Dronacharya Award on September 1, 1999. The award, instituted in 1985, is given to eminent coaches who have successfully trained international sportspersons and teams. It carries a statuette of legendary archer Guru Dronacharya, a scroll and Rs. 2,50,000 in cash.

Medal Winners of the Century : Indian weightlifter, Namreipakam Kunjarani Devi, was ranked fifth among the top ten medal winners of the century by the International Weightlifting Federation President, Mr. Schodi. Kunjarani, who finished runner-up in the world championship held at Chiang Mai (Thailand) in 1997, received this honour for winning 20 medals in seven world championships she participated in. The ranking was published in the latest issue of *World Weightlifting* magazine.

MAC Spinner of the Year Award : Left-arm spinner Karthik Murali, who represents Railways in the National cricket, was presented the MAC Spinner of the Year Award (1998-99 season) at Chennai on September 27, 1999. The award comprises a citation and a cash prize of Rs. 50,000.

Top Test Batsman in the World : The star batsman and the Captain of Indian team, Sachin Tendulkar, rated as the Top Test Batsman in the World, on form and career achievement by the London-based *Wisden Cricket Monthly*, was described as the *Prince of Batsmen* by the magazine.

International Tennis Hall of Fame : Former Tennis star John McEnroe of the United States was inducted into the International Tennis Hall of Fame on July 10, 1999. Winner of three Wimbledon singles titles and four in the US Open, McEnroe (who played for the US Davis Cup team for 12 years) has won 77 championships in all.

Chess Oscar : India's Grandmaster Viswanathan Anand was awarded Chess Oscar for the second straight year for his "Outstanding Performance" in the year 1998. This prestigious International prize is awarded by the Russian Chess magazine *64-Chess Review* to the best Chess player of the year on the basis of his "real merit and strength" and not titles.

FIFA World Player Of The Year : French World Cup hero Zinedine Zidane was voted FIFA's World Player of the Year for 1998, on February 1, 1999. With 93 first preference votes among the 132 national coaches who voted, Zidane garnered 518 points against 164 for Ronaldo who had won the trophy in 1996 and 1997. Croatian soccer player

Davor Suker, the top scorer in 1998 World Cup, finished third with 108 points.

Footballers Of The Century : A poll conducted by the International Federation of Football History and Statistics voted John Cruyff of the Netherlands as the European Footballer of the Century, while Brazilian legendary player Pele has been named South American Footballer of the Century and George Weah as the African Footballer of the Century.

Squash

Phil Smart Mercedes Benz Women's World Squash Open : Cassie Campion of England won the Phil Smart Mercedes Benz Women's World Squash Open title defeating Michelle Martin of Australia 9-6, 9-7, 9-7 in Seattle on October 25, 1999.

World Open : Peter Nicole of Britain became the first British squash player to win the World Open, beating Egyptian Ahmad Barada 15-9, 15-13, 15-11 in the final in Cairo on September 16, 1999.

Al Ahram World Men's Team Squash Championship : Host Egypt clinched the Al Ahram World Men's Team Squash Championship defeating Wales 3-0 in Cairo on September 22, 1999.

Swimming

Asia-Pacific Swimming and Diving Championship : Kerala's M. Usha stole the limelight winning two gold medals to enable host India finish sixth in the 13th Asia-Pacific Swimming and Diving Championship in New Delhi on August 24, 1999. On the last day, India bagged 14 gold medals to take their tally to 48 with 4 gold, 18 silver and 26 bronze. Of the four gold, Usha won three and Rakhi Mehra clinched one. Chinese Taipei retained the overall championship title with 136 medals including 46 gold. Thailand finished runners up with 43 medals including 12 gold, 9 silver and 13 bronze while Hong Kong was placed third with 45 medals—18 gold, 14 silver and 13 bronze.

Tennis

Australian Open : Yevgeny Katelnikov of Russia won the Australian Open title in the men's singles defeating the Swedish Thomas Enqvist 4-6, 6-0, 6-3, 7-6 (7-1) in Melbourne on January 31, 1999 while Martina Hingis of Switzerland clinched her third consecutive Australian Open title beating Amelie Mauresmo of France 6-2, 6-3 in the women's singles final on January 30. In men's doubles Patrick Rafter of Australia and Jonas Bjorkman of Sweden defeated the top seeds India's Mahesh Bhupathi and Leander Paes 6-3, 4-6, 6-4, 6-7 (10-12), 6-4. In the women's doubles finals Martina Hingis and

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Diary Of Events — SPORTS

JANUARY 1999

4 : Rahul Dravid scores 190 runs in the third Test against New Zealand at Hamilton and crosses the 2000-run mark in Test cricket.

★ Farah Khan (Karnataka) wins the National Billiards Championships for Women defeating Amrita Mahapatra (Orissa).

5 : Mark Taylor of Australia achieves a record for the highest number of catches in Test cricket (157 in 104 Tests) in the fifth Test against England at Sydney.

★ Australia annex the fifth Test and the Ashes series (3-1) against England.

6 : Rahul Dravid joins Hazare-Gavaskar Club as the third Indian batsman to score a century in each innings of a Test match.

9 : Australia's newest tennis sensation 15-year old school girl, Jelena Dokic, teaming with Mark Philippoussis, steers her country to victory over Sweden in Hopman Cup final.

13 : Chetan Baboor and Paulmi Ghatak annex the Men's and Women's National Table Tennis Championships respectively at Chennai.

19 : New Zealand level one-day series (2-2) with India. Rahul Dravid is Man of the Series.

28 : Central Zone annex Deodhar Trophy defeating South Zone by 5 wickets at Agartala (Tripura).

29 : Martina Hingis (Switzerland) and Anna Kournikova (Russia) annex the Women's doubles crown in the Australian Open defeating Lindsay Davenport (USA) and Natasha Zvereva (7-5, 6-3).

30 : Top seeded Indian duo Leander Paes and Mahesh Bhupathi defeated by 11th-seeded Australian Patrick Rafter and Swede Jonas Bjorkman, 6-3, 4-6, 6-4, 6-7 (10-12), 6-4 in the men's doubles of Australian Open '99.

★ Martina Hingis (Switzerland) wins her third consecutive Australian Open Women's singles title with a 6-2, 6-3 victory over Amelie Mauresmo (France).

★ Alok Kumar of Punjab annexes the National Billiards title defeating Devendra Joshi at Delhi.

31 : Tenth-seeded Russia's Yevgeny Kafelnikov and the 1996 French Open champion, defeats Thomas Enqvist (Sweden) 4-6, 6-0, 6-3, 7-6 (7-1) to win the men's singles title in the Australian Open '99.

★ Pakistan defeat India by 12 runs in a thrilling encounter in the first Test at Chennai. India's Sachin Tendulkar, with a brilliant 135, declared Man of the Match.

FEBRUARY 1999

1 : Jaspal Rana clinches gold in the centre fire pistol event at the 42nd National Shooting Championships at Bangalore. He had also won gold in air pistol and standard pistol events earlier.

7 : India's versatile bowler, Anil Kumble, becomes the second spinner in the world (after Jim Laker of England in 1956) in the 130-year history of Test cricket to claim 10 wickets in one innings in the second innings of the second Test against Pakistan at Ferozeshah Kotla in New Delhi.

★ India and Pakistan share honours (1-1) in the 2-match Test series of Pepsi Challenge Cup, as India defeat Pakistan by 212 runs in the second Test at New Delhi.

14 : President K.R. Narayanan declares the 5th National Games open in Imphal.

16 : Sanamacha Chanu (Manipur) creates a national record lifting 80 kg in snatch weightlifting event beating N. Kunjarani Devi to second place in the 5th National Games at Imphal.

18 : Jaspal Rana improves on his own world mark in centre fire pistol, at the shooting range of the Khuman Lampak Sports Complex at the fifth National Games in Imphal. Jaspal shoots 591 points out of the possible 600 which is one point more than the previous world record of 590.

21 : Karnataka swimmer Nisha Millet creates history by picking up her tenth gold winning the 50m freestyle event at the Fifth National Games in Imphal.

23 : Nisha Millet of Karnataka clinches 14 gold medals in swimming at the Fifth National Games in Imphal.

24 : India defeats Pakistan 3-2 in the final match of the nine-match Hockey Test series in Lahore. India loses the series 3-6.

25 : Nisha Millet of Karnataka adjudged Best Sportswoman of the National Games while Kerala's Sebastian Xavier with seven golds is Best Sportsman of the Games.

★ Manipur declared Champions of the National Games on points, followed by Kerala.

MARCH 1999

5 : Haile Gebrselassie of Ethiopia clinches his seventh world title (Senior or Junior) of his career winning the 3,000 metres final at the World Indoor Athletics Championships in Maebashi, Japan.

★ Geet Sethi of India defeats David Causier in the finals of the World Match Play Billiards Championship at Midsomer Norton.

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6 : Wasim Akram registers his first Test cricket hat-trick for Pakistan in the inaugural Asian Test Championship against Sri Lanka in Lahore.

14 : Pakistani captain Wasim Akram becomes the third bowler in the world to achieve two hat-tricks in Test cricket while playing in the final of the Asian Test Championships against Sri Lanka. Australia's H. Trumble was the first to achieve two hat-tricks against England in Melbourne in 1901-02 and 1903-04. T.J. Mathews, also of Australia, achieved this distinction in the same Test against South Africa in Manchester in 1912, while Akram has achieved this feat in successive Tests.

15 : Pakistan claims the Asian Test Championships title defeating Sri Lanka by an innings and 175 runs. Ijaz Ahmad adjudged Man-of-the-Match and Wasim Akram declared Man-of-the-Series.

26 : Indian Airlines clinch the National Hockey Championship at Hyderabad defeating Tamil Nadu 4-1.

28 : India completes a haul of seven golds and one silver in the women's and men's section respectively at the Commonwealth Weightlifting Championship in Melbourne.

29 : Viswanathan Anand wins the rapid title at the Rapid Chess Tournament at Monte Carlo.

31 : Services defeat Railways in the 45th National Boxing Championship at Visakhapatnam.

APRIL 1999

4 : Bengal defeat Goa 5-0 to win the Santosh Trophy National Football Championship.

* Pakistan clinch the Pepsi Cup Tri-series defeating India by 123 runs in Bangalore. Man of the Match - Azhar Mahmood, Man of the Series - Saurav Ganguly.

10 : Pakistan defeat South Korea 3-1 in the finals of Sultan Azlan Shah Cup Hockey Tournament at Kuala Lumpur.

11 : Mahesh Bhupathi and Leander Paes win the doubles event of the Gold Flake Open Tournament in Chennai defeating Wayne Black and Neville Goodwin.

19 : Australia defeat West Indies at the fourth One-day International to square the series 2-2.

26 : Mahesh Bhupathi ranked as the World Number 1 Individual and Leander Paes as World Men's Doubles as per ATP ranking list.

MAY 1999

1 : India retain the SAFF Coca-Cola Cup Football Tournament at Feroz Shah Kotla of the Tournament and Man of the Final - Bhutia of India.

8 : Ashwini Putalik of Indore clinches the final of the All-India Women's Snooker Championship defeating the formidable two-time former National Champion Judith Walia of Bangalore in a best of seven frames final in Mumbai.

10 : Yevgeny Kafelnikov of Russia is ranked World No. 1 tennis player as per ATP Tour ranking release. He replaces Pete Sampras. Mahesh Bhupathi of India slides from world No. 1 to No. 2 individual doubles day replaced by Paul Hanstrom.

11 : Sachin Tendulkar becomes the first Indian sportsman to be named on the cover of American newsmagazine, TIME.

14 : British Prime Minister, Mr Tony Blair opens the 1999 World Cup tournament at Lord's - London.

18 : Denmark becomes the first country to lose the Sudirman Cup world team table tennis event as they concede 3-1 with England, Hong Kong and a wonderfully flourishing team from Copenhagen.

JULY 1999

3 : East Asia of Germany, of the 1998 World Cup, clinches the trophy for the first time in the history of the tournament.

3 : India clinch the 1999 Cricket World Cup for the first time in the history of the tournament, defeating Australia in the final at the Wankhede Stadium in Mumbai.

10 : The Indian Cricket team clinches the 1999 Cricket World Cup for the first time in the history of the tournament, defeating Australia in the final at the Wankhede Stadium in Mumbai.

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the first gold for hosts Karnataka in the women's 58 kg category on the second day of National Weightlifting Championships at Bangalore.

20 : Australia clinch the World Cup inflicting a humiliating eight-wicket defeat to Pakistan at Lord's. Pakistan—132; Australia—133/2. Man of the Match—Shane Warne. Player of the Tournament—Lance Klusener (South Africa).

★ Australia score a 3-1 victory over South Africa in the final of the Champions Trophy of the men's field hockey competition at Brisbane.

21 : Germany win the European Athletics Cup in men's competition while Russia's women team lift the title for the third time in Paris.

30 : Germany's tennis sensation, Boris Becker bids farewell to the game after being defeated by Patrick Rafter 6-3, 2-6, 3-6 at Wimbledon.

JULY 1999

2 : The annual limited-overs Sahara Cup Cricket series between India and Pakistan slated to be held in the month of September in Canada is cancelled due to the Pakistani intrusions in Kargil in Kashmir.

4 : Mahesh Bhupathi and Leander Paes of India win the Grand Slam Doubles title beating Paul Haarhuis (the Netherlands) and Jared Palmer (US) (6-7, 6-3, 6-4, 7-6) at Wimbledon. Paes also wins the Wimbledon Mixed Doubles Title pairing with Lisa Raymond (USA).

★ Pete Sampras equals Roy Emerson's record of 12 Grand Slam titles by winning the Wimbledon Men's Singles beating his compatriot Andre Agassi 6-3, 6-4, 7-5.

5 : World Champion Tomas Dvorak (Czechoslovak) shatters seven-year old world record of 8891 points in decathlon of Dan O'Brien (US) by amassing 8,994 points in the European Cup decathlon team championships.

★ Ms. N.K. Kunjarani achieves the distinction of becoming one of the top ten women weightlifters of the century according to the ratings issued by the *World Weightlifting* magazine.

6 : Tollygunge Agragami lift the fifth McDowell Soccer Cup beating East Bengal 6-3 in a tie-breaker in Calcutta.

11 : The United States women team wins the women's World Cup soccer beating China 5-4 on penalties in Los Angeles, US.

★ Kaptaan Singh of the Services Sports Central Board wins the gold medal in the 30 years and above age group at the 8th Asian Triathlon Championship in South Korea.

12 : India's Leander Paes adds another feather to his men's doubles cap winning the Hall of Fame tennis title pairing with Wayne Arthurs of Australia.

They defeat US-Armenian pair of Chris Woodruff and Sargis Sargsian, 6-7 (6-8), 7-6 (9-7), 6-3.

17 : Grandmaster Viswanathan Anand becomes the first person in the game of 64-squares to cross the magical figure of 2800 points in rapid chess, topping the World Rapid Chess Ranking introduced by the Federation International de Echess (FIDE) for the first time.

20 : One-day cricket is excluded from the 2002 Commonwealth Games, according to the New Zealand Olympic Committee, the organisers of the games.

26 : Haryana lifts women's Federation Cup (Hockey) defeating Indian Railways 3-1 after a tie-breaker at Tirupati, Andhra Pradesh.

★ Johnny Gray of Cuba bags Gold in Pan American Games (Athletics) in 800 metres men's race at Winnipeg (USA).

28 : India's master batsman Sachin Tendulkar is appointed the new Captain of Indian Cricket team in place of Mohammad Azharuddin.

29 : The London-based *Wisden Cricket Monthly* rates India's batting maestro Sachin Tendulkar as the Top Test Batsman in the world, on form and career achievement. Tendulkar occupies the top ranking elbowing Aravinda de Silva of Sri Lanka.

31 : Mohammed Rizaz is the Captain of the Indian hockey squad for the tour of South Africa while Mr. Rajesh Chauhan would don the cap for the hockey team's tour of Zimbabwe and Kenya.

AUGUST 1999

1 : Former captain of Germany's Football Team, Franz Beckenbauer, is named the German Player of the Century by the viewers of television network ARD and readers of football magazine *Kicker*.

★ Ms. Sandra Volker of Germany creates a new world record (28.71 sec) in 50 m backstroke, claiming the gold medal at the European Swimming Championships at Istanbul.

2 : Pete Sampras defeats Andre Agassi 7-6 (7-3), 7-6 (7-1) in the Mercedes Benz Cup tennis finals at Los Angeles.

★ Magnus Norman of Sweden wins the Croatia ATP Tournament Championship beating Jeff Tarango of US 6-2, 6-4.

5 : The fifth Asian Winter Games will be held from February 1 to 8 in 2003 in the northern cities of Amori in Japan. Two new games—snowboarding and biathlon are being included in the Games.

★ Mexico wins the Confederation Cup in soccer defeating Brazil 4-3 in Mexico.

6 : Ma Lin and Zhang Yingying (both Chinese) win the mixed doubles title outclassing the pair of Feng Zhe-Sun Jin also of China) 21-15, 21-19, 9-21, 21-15 in the 45th World Table Tennis Championships at Eindhoven, Netherlands.

7 : Asian Games bronze-medallist Sunita Rani Punjab sets the new national mark (08.01 minutes) in the women's 1500m at the Fifth Federation Cup athletic championships at Bangalore.

★ The Yokohama Stadium in Japan is the venue for the finals of the 2002 World Cup soccer which will be co-hosted by the Japan and South Korea.

8 : Mike Russel of England clinches the Welsh World Professional Billiards Championships defeating his compatriot Peter Ebdon by 832/200 in Chennai.

★ Kapil Dev, India's legendary all-rounder, wins the Best Cricketing Golfer Award in 'Ambassadors' Cup Golf Tournament in Gurgaon.

9 : Martina Hingis of Switzerland wins the US Open Classic tennis title beating Venus Williams (US) 6-4, 6-0 at Carlsbad, California.

11 : Middle Distance queen Jyotirmoyee Sikdar wins the Rajiv Gandhi Khel Ratna Award; while Rahul Dravid and Nayan Mongia (Cricket), Lalchand Bhatia (Soccer), NG Dingko Singh (Boxing) are among the 30 sportspersons selected for the 1998 Arjuna Award.

★ Gopichand and Apama Popat win the men's and women's singles titles respectively at the fifth All India Open Badminton Tournament in Bangalore.

16 : Tiger Woods bags the PGA Championship title defeating Sergio Garcia of Spain thereby becoming the No. 1 Golfer in the world.

24 : Kerala's M. Usha clinches two golds in the 13th Asia-Pacific Swimming and Diving Championships in Delhi. India finishes sixth by bagging 48 medals (4 gold, 18 silver and 26 bronze). Chinese Taipei emerges the Champions with 136 medals including 46 gold.

29 : India beat Sri Lanka by 49 runs in the AIAA Cup triangular series at the SSC ground in Colombo. Captain Sachin Tendulkar completes his 3rd century in One-day International Cricket.

★ Michael Johnson of USA becomes the most decorated Gold Medalist in the athletics world championships history by bagging the record ninth gold of his career in 4 x 100 m relay at the IAAF World Athletic Championships, at Seville, Spain. He now boasts of the 1993 and 1995 200 m titles, four straight 400 m Gold medals (1993, 1995, 1997 and 1999) and three 4 x 400 m relay titles (1993, 1995 and 1999).

★ Tiger Woods of the US wins the NEC Invitational World Golf Championships title beating his compatriot Phil Mickelson 71-65 at Arken, Ohio in USA.

★ GM Alexander Khalifman of Russia wins the finals of the FIDE World Chess Championship

beating Vladimir Akopian of Armenia in Las Vegas, US.

31 : Sri Lanka beats World Cup Champions Australia by eight wickets in the finals of the AIIWA Cup Triangular Cricket Tournament in Colombo. Man of the Match—Romesh Kaluwitharan.

SEPTEMBER 1999

1 : Bangladesh will host the Asia Cup Cricket tournament starting on April 2, 2000.

7 : West Indies wins the Coca-Cola Cricket Challenge Trophy beating India by four wickets in Singapore. Man of the Match and Series—Ricardo Powell.

9 : Mahesh Bhupathi of India pairing with Ai Sugiyama of Japan beat Kimberly Po and Donald Johnson both of US in the Mixed Doubles final of the US Open (Tennis), 6-4, 7-5 in New York, USA.

11 : Serena Williams of US wins the US Open Women's Singles title defeating Martina Hingis of Switzerland, 6-3, 7-6 (7-4).

12 : Andre Agassi of the United States wins the US Open (Tennis) title defeating his compatriot Todd Martin 6-4, 6-7, 6-7 (5-7), 6-7 (2-7), 6-3, 6-2.

14 : India wins the Inaugural DMC Cup beating West Indies by 88 runs in Toronto in the final match to clinch the series (2-1). Captain Saurav Ganguly is declared as the Player of the Series.

17 : Ajay Jadeja named the captain of Indian squad to the four-nation tournament in Nairobi from September 25. Mohd. Kaif of Uttar Pradesh and Vijay Bhardwaj of Karnataka are included in the 14-member Indian team. M.S.K. Prasad (Andhra Pradesh) is the wicket-keeper replacing Nayan Mongia.

19 : Pakistan clinches the three-match DMC Trophy by 2-0 defeating West Indies by 42 runs in the second match in Toronto, Canada.

21 : Industrialist Mr. A.C. Muthiah of Tamil Nadu is elected as the President of the Board of Control for Cricket in India and Kapil Dev appointed as the Cricket National Coach for two years.

22 : Roger Binny is appointed as India's new Juniors' cricket coach.

25 : Eighth SAF Games declared open at Dashrath Stadium in Kathmandu.

27 : US wins Ryder Cup trophy in Golf defeating Europe at the Country Club in Brookline.

29 : At the SAF Games, on the final day of the athletics events, Sunita Rani wins her third gold.

OCTOBER 1999

1 : Rahul Dravid is conferred the Best Cricketer of the World Cup Award for India in Nairobi; Jacques Kallis of South Africa is adjudged the Cricketer of the Year.

★ Jaspal Rana equals his SAF Games record of 581 in the men's 25m centrefire pistol event.

3 : South Africa lift the LG Cup defeating India by 24 runs at Nairobi. Vijay Bhardwaj is adjudged the Man-of-the-Series.

4 : SAF Games ends on a vibrant note. Final Medals tally : India (102G, 58S, 37B) and Nepal (31G, 10S, 24B). Nisha Millet, India's Best Sportswoman in 5th National Games (Imphal, February, 1999) wins seven gold medals in various swimming events besides breaking five records including that of Bula Choudhary's 29.29 second in 50 m freestyle (set at Colombo in 1991), by clocking 28.71 seconds.

5 : The Bombay Gold Cup hockey tournament which started in 1955, is revived after a gap of five years and will be held in Mumbai during October, 1999.

7 : India to take on Lebanon at home in the first round of the Asia-Ocean/Group 1 Davis Cup rubber from February 4 to 6, 2000.

8 : Geet Sethi bags the Fred Davis Award for the billiards player of the Year 1998-99 instituted by the World Professional Billiards and Snooker Association, London.

10 : 34th Gymnastics World Championship commences with the opening ceremony in Tianjin, China.

12 : Portugal to host the 2004 European Soccer Championship.

13 : The Coca Cola Champions Trophy three-nation (Pakistan, West Indies and Sri Lanka) tournament begins in Sharjah.

17 : Jeev Milkha Singh of India wins the Lexus International title in Golf defeating Zaw Moe of Myanmar and Taimur Hussain of Pakistan at Bangkok, Thailand.

18 : John Xavier and Surindra Singh become the first Indians to qualify for the Sydney Olympics winning the bronze medal at the eighth Asian Rowing Championship near Tokyo.

19 : Sir Donald Bradman, considered the greatest batsman ever, is chosen to light the Olympic flame for Sydney Olympics on September 15, 2000.

20 : Indian Cricket Team Coach, Kapil Dev is invited as a jury-member of the World Sports Academy for selecting the sportspersons as recipients of Laureus Sports Awards to be presented in Monaco on May 25, 2000.

22 : Pakistan wins the Coca-Cola Trophy defeating Sri Lanka by 80 runs at Sharjah.

24 : Australia clinches the Limited Overs series 3-0 defeating Zimbabwe in Harare.

★ Australia's Kenny Druce wins the Singapore Open Golf tournament; Jyoti Randhawa of India

shares joint-third with Kenny Druce and South Africa's Sammy Danels.

★ Leg Spinner Anil Kumble, becomes the third Indian bowler after Kapil Dev (434) and Bishen Singh Bedi (266) to capture 250 Test wickets in the second Test against New Zealand at Kanpur.

28 : Middle-distance Star Sunita Ranil and sprinter Anil Kumar set new meet records while Railways bag seven of the 11 titles on the opening day of the 39th National Open Athletics Championship at Bhopal.

30 : Anil Kumar becomes the fastest runner of the meet by winning the 100m gold and P.T. Usha clinches an individual hat-trick of gold medals on the concluding day of the National Open Athletics Championship at Bhopal.

★ Sachin Tendulkar scores his first double century while playing against New Zealand in the third Test at Ahmedabad.

NOVEMBER 1999

2 : With the third and final Cricket Test ending in a draw in Ahmedabad India wins the series 1-0 against New Zealand. India—583/7 (declared) and 148/5 (declared); New Zealand—308 and 252/2. Man of the Match—Sachin Tendulkar. Man of the Series—Anil Kumble.

7 : Ace Golfer Tiger Woods of America wins the American Express World Gold Championship in Valderama.

9 : Ace Hockey centre forward Dhanraj Pillay is included in the 18-member Indian team for the Asia Cup to be played in Malaysia from November 18 to 28.

13 : On the third day of the second Test against Zimbabwe, South Africa's wicket keeper Mark Boucher becomes the highest scoring night-watchman in Test cricket history (125 runs) and surpasses the record of 105 held by Australian Tony Mann.

17 : India clinches the Pepsi One-Day International series (3-2) defeating New Zealand by seven wickets in the 5th One-Day International in New Delhi. New Zealand—179/9; India—181/3. Man of the Match—Saurav Ganguly. Man of the Series—Saurav Ganguly. Ganguly gets FIAT SIENA car in prize for being the Pepsi Cup Man Of the Series. This is his third car in prize won by Ganguly as Man of the Series. The first being OPEL ASTRA in Sahara Cup in 1998 and the second being FIAT SIENA in the Pepsi Cup Series '99 among India, Australia and Zimbabwe.

21 : Tiger Woods of the US leads his country to lift the Golf World Cup defeating Spain in Kuala Lumpur.

4. Latest General Knowledge

Commissions And Committees

Second National Commission on Labour :

The second National Commission on Labour was constituted under the Chairmanship of former Labour Minister Mr. Ravindra Varma on October 16, 1999. The 10-member Commission will suggest rationalisation of existing laws relating to labour in the organised sector through an umbrella legislation for ensuring a minimum level of protection to workers in the unorganised sector.

Law Commission : The Law Commission, headed by Justice Mr. B.P. Jeevan Reddy, in its 170th report on reforming electoral laws, has recommended, among a number of measures, a fixed five-year term for the Lok Sabha and the State Assemblies to ensure stability in the governance of the country. It has suggested the inclusion of a new rule 1998A in the Rules of Procedure and Conduct of Business for Lok Sabha to achieve this aim.

Subrahmanyam Committee : The Government announced (August 4, 1999) that the four-member Committee headed by noted defence analyst Mr. K. Subrahmanyam, will review the events that led to Pakistan's aggression on Kargil.

Cabinet Committee on Disinvestment : The Cabinet Committee on Disinvestment approved (July 6, 1999) an ambitious disinvestment programme for the current financial year. The disinvestment drive that will include public sector enterprises such as ITDC, MTNL and VSNL, is expected to mop up Rs. 10,000 crore during 1999-2000.

Central Committee for Food Standards : The Central Committee for Food Standards, the apex body for laying down food standards, has decided that all sweetened soft drinks should carry cautionary label "Not recommended for children." The committee took this decision as it felt that soft drinks, owing to the presence of artificial sweeteners, do not have much nutritive value.

United Nations Human Rights Commission : The United Nations Human Rights Commission (UNHRC), in its assessment of human rights performance of governments (April 23 1999), has condemned Afghanistan, Cuba, Iran and Iraq, but avoided mention of China for violation of human rights.

Defence

INS Sindhuvir : INS Sindhuvir, the submarine rejoined the 11th submarine squadron of the Eastern Naval Command at Vishakhapatnam on October 31, 1999 after its extensive modernisation for over two years. The submarine, which is now equipped with state-of-the-art weaponry and missile systems has enhanced its strike capabilities adding to the strength of the submarine arm which guards the vast maritime border of the Eastern Sea Board. Commissioned in Riga of the then USSR in 1988, INS Sindhuvir, after completion of four operational cycles and 10 years was off-loaded to Zvezdochka Shipyard, Severodvinsk in Russia for a mid-life modernisation and upgradation of weapons and sensors. She was the first Indian submarine to be transported on Super Servant 3 in 1997 for refit and modernisation which commenced in July the same year. After two years of repairs costing an estimated Rs. 140 crore for the package of refit and new equipment the submarine with a new set of weapons and sensors, has become one of the Indian Navy's formidable platforms.

Akash Test-fired : The multi-target surface-to-air missile with a range of 25 km, Akash was successfully test-fired from the Interim Test Range (ITR) at Chandipur-on-Sea about 15 km from Balasore in Orissa hitting an unmanned aircraft *Lakshya* on October 5, 1999. Earlier, the missile was successfully test-fired on September 30, 1999 when it hit *Nishant*, an unmanned aircraft vehicle flown earlier from the ITR with desired accuracy.

Nishant Test-flown : The indigenously-built unmanned aircraft, *Nishant* was successfully test-flown from the Interim Test Range at Chandipur-on-Sea, about 15 km from Balasore, Orissa on September 29, 1999. Developed by the Defence Research and Development Organisation (DRDO), *Nishant* was designed to undertake discrete aerial surveillance of battlefields, including target acquisition. It was earlier test-flown on April 13, 1999.

Nag Test-Fired : The indigenously developed anti-tank missile *Nag* was successfully test-fired from the Interim Test Range (ITR) at Chandipur-on-Sea, about 15 km from Balasore, Orissa, on September 4, 1999. *Nag's* speciality is that it can make the tipper part of the tank vulnerable. It was first test-fired on September 9, 1997.

Manufacture of Bofors Guns : The Chairman of the Ordnance Factory Board, Mr. D. Rajgopal

said on July 18, 1999 that the 155-mm Bolors guns that played a significant role in evicting Pakistani intruders in Kargil operations, would be manufactured in the ordnance factories at Kanpur and Jabalpur.

INS Mysore Commissioned : The Prime Minister Mr. Atal Behari Vajpayee Commissioned *INS Mysore*, the second indigenously built destroyer-class ship at the Naval Dockyard in Mumbai on June 2, 1999. Built at Mazagon Dock Ltd. Mumbai, this 6700-tonne destroyer has joined the Indian Navy within two years of commissioning of *INS Delhi*, the first warship of its class.

Naval Version of Trishul Test-fired : The naval version of *Trishul*, capable of neutralising sea-skimming missiles, was successfully test-fired from the naval base *INS Dronacharya* at Cochin, Kerala on May 26, 1999. With a supersonic speed, *Trishul* carries a low altitude sensitive radio-altimeter and "height lock loop control on board to skim over the sea at a very low altitude and engages skimming missiles like harpoons coming towards Indian ships."

Trishul Test-fired : India's most sophisticated short-range surface-to-air missile *Trishul* was successfully test-fired from the Interim test range (ITR) at Chandipur-on-Sea in Orissa on April 16, 1999. The missile having a range of 50 km was test-fired twice. The missile, especially designed for the sea skimming exercise for the Indian Navy, hit the target dropped from the unmanned aircraft vehicle, *Nishant*. *Trishul*, which has a triple role for the three wings of the Defence, was one of the five indigenous missiles under various stages of development by the Defence Research Development Organisation under the Integrated Guided Missile Development Programme (IGMDP). A low-level range quick reaction missile system, it has an intercept range of 9 km with an achieved reaction time of six seconds.

Agni-II Missile : India successfully test-fired the extended range Agni II Intermediate Range Ballistic Missile (IRBM) from a new launching site (IC-4 at Wheeler Island) on the Orissa coast on April 11, 1999. The most significant aspect of the test-firing was the usage of solid fuel as a propellant that reduces the time for preparation of the launch and has logistical advantages such as longer shelf-life, apart from being compact and non-corrosive.

Pinaka Test-Fired : The indigenously developed multi-barrel rocket system *Pinaka* was successfully test-fired from the Defence Department at Chandipur-on-Sea, about 15 km from Balasore in Orissa on March 19, 1999. With a range of 39 km, *Pinaka* can fire a salvo of 12 rockets within 44 seconds.

Defence Review Group : The National Security Council (NSC) formed a group on nuclear doctrine to carry out their first-ever Strategic Defence Review (SDR) including plans for operationalisation of India's nuclear deterrent. Mr. K. Subrahmanyam was appointed Convener of the group. Other members included Prof. Brahma Chellaney, Prof. U.R. Rao, Air Chief Marshal (Retd.) S.K. Mehra and Prof. Martin Zuberi.

Economic Scene

RBI Cuts CRR Rate : The Reserve Bank of India (RBI) in its monetary and credit policy for the second half of 1999-2000, announced on October 29, 1999, reduced the Cash Reserve Ratio (CRR) maintained by the scheduled commercial banks by one per cent from the present level of 10 per cent in two instalments, effective the fortnights beginning November 6 and November 20, 1999, increasing the lendable resources of banks by Rs. 7,000 crore. The RBI has also projected a slightly lower GDP growth of 6 to 6.5 per cent, assuming that the recovery in industrial production, witnessed in the first half, would gather momentum during the rest of the year and there would be no setback on the agricultural front.

International Roaming Services : According to the reports published on October 18, 1999, RPG Cellular has launched its international roaming services, branded as Power Roam. The services which would enable RPG cellular users to use their cellphones in other countries they travel to, are now being offered to seven countries including Australia, Belgium, France, Singapore, Switzerland, UAE and the UK besides Hong Kong.

Software Exports up in First-Half : Electronics and Computer Software Export Promotion Council (ESC) said on October 26, 1999 that software exports registered a 37 per cent growth during the first half of the current fiscal year (April-September). Exports during this period was Rs. 10,370 crore and according to the council estimates the second half exports would be in excess of Rs. 13,000 crore. (In 1998-99, these exports rose by 56% to \$2.65 billion). Mr. Vivek Singhal, ESC Chairman said that the country's overall growth in software exports would be around 33 per cent over the previous year's figures of Rs. 17,775 crore and would touch \$50 billion mark by 2008, as envisaged by the Prime Minister's Task Force on Information Technology (IT).

Gold Deposit Scheme : Under the Gold Deposit Scheme cleared by the RBI on October 5, 1999, scheduled banks would accept gold deposits from individuals, companies, charitable and religious institutions only in scrap by either issuing a certificate or bond transferable by endorsement and

delivery. The subscribers of the scheme will be entitled to interest payments. "Banks will be free to fix their own interest rates on the Gold Deposit Scheme", said the RBI. The maturity range of the scheme will be from three to seven years with an initial lock-in period to be specified by each bank. The deposit will be repaid in the form of standard gold bar of 0.995 fineness or in rupees equivalent to the price of gold as on the date of maturity at the option of the depositors.

HIGHLIGHTS OF GOLD DEPOSIT SCHEME

- Prior approval of the RBI
- Individual banks to fix interest rates
- Maturity period to range from 3 to 7 years.
- Banks to fix the initial lock-in period for the scheme

- Premature payments after initial lock-in period
- Loans against gold deposits
- Incentives to the banks by the RBI/ Government

ICICI—First Indian Firm Enlisted on NYSE : The Industrial Credit Investment Corp. of India (ICICI) on September 22, 1999 became the first Indian company to enlist on the New York Stock Exchange (NYSE) with American Depository Receipts (ADRs) at \$9.8 per ADR or at a 6.5 per cent premium to the five-day average closing price of the ICICI scrip on the domestic market.

ONGC Profit : According to Mr. B.C. Bora Chairman and Managing Director of ONGC, the Corporation registered the highest ever profit of Rs. 2,754 crore during 1998-99 and declared a dividend of 55 per cent.

\$386 Million World Bank Loan for India : India secured the first major World Bank loan of \$386 million on July 6, 1999 after the imposition of economic sanctions against it following the Pokhran nuclear tests in May 1998. Agreements were signed for a \$300 million loan for Integrated Women and Child Development Project in five states including Kerala, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh and a \$86 million loan for Rajasthan district primary education project.

Girl Child Scheme Redesigned : The Government has redesigned the Balika Samridhi Yojna with the Union Cabinet approving the improved version of the scheme on June 29, 1999 in line with the recommendations of the Group of Ministers (GoM) constituted earlier to review the scheme.

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PM Launches Insurance Scheme : Prime Minister, Mr. Atal Behari Vajpayee on June 22, 1999

launched the Rashtriya Krishi Bima Yojana (National Agriculture Insurance Scheme) a radically-improved insurance package over the existing Comprehensive Crop Insurance Scheme which had been effective since 1985.

India's Economic Growth : According to the United Nations report, India's strong economic growth is expected to continue with its Gross Domestic Product (GDP) or total output pegged at six per cent in 1999, up from 5.6 per cent in 1998 and 5.1 per cent in the 1997. Pakistan and China are expected to witness a deceleration in GDP with Pakistan decelerating from 4.9 per cent in 1998 to 4.5 per cent in 1999 and China from 7.8 per cent in 1998 to 7.5 per cent in 1999.

Coffee Exports at Record High : During 1998-99 (April-March) India's coffee exports touched an all-time high of 207,266 tonnes valued at Rs. 1,722 crore compared with 179,059 tonnes at Rs. 1,707 crore in the previous year.

VSNL Net Profits Increase By 38.58 Per Cent : Videsh Sanchar Nigam Limited, the country's sole carrier of international phone traffic, registered a 38.58 per cent increase in its net profit, which rose to Rs. 13,41.29 crore in fiscal 1998-99 while its total revenue stood at Rs. 7,189.55 crore representing an increase of 11.70 per cent.

Record Wheat Procurement : As a result of record wheat arrivals in *mandis*, the Food Corporation of India (FCI) and other Government agencies procured 70.05 lakh tonnes of wheat till April 22, 1999 against 21.4 lakh tonnes procured last year during the same period. Total wheat arrivals this year in various State *mandis* have been to the tune of 72.25 lakh tonnes.

India Fifth Largest Economy : According to the latest World Bank (WB) statistics released in Washington on April 26, 1999, India is ranked as the world's fifth largest economy in terms of Purchasing Power Parity (PPP) after the US, China, Japan and Germany.

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Jawahar Rozgar Yojana Replaced : Minister of State for Rural Areas and Employment, Mr. Baba Gouda Patil formally announced on March 23, 1999 the termination of the employment-oriented programme Jawahar Rozgar Yojana. However, it was being "restructured and streamlined" and will be called Gram Samridhi Yojana, said Mr. Patil.

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New Delhi on March 19, 1999. He dedicated the schemes—Bhagyashree Child Welfare Policy and Rajrajeshwari Women Welfare Policy to the nation.

Kisan Credit Card Scheme : The Central Government has launched a model Kisan Credit Card Scheme that is aimed at making adequate and timely availability of credit to farmers. Under the scheme, farmers can avail themselves of credit facility, whenever required on the basis of their land holdings.

Samadhan Scheme Fetches Rs 2,000 crore : The *Kar Vivad Samadhan Scheme* launched by the Government through an ordinance on October 31, 1998, collected Rs. 2,000 crore as realisable tax despite extending the period of filing declarations under the scheme by a month till January 31, 1999. The earlier scheme (VDIS) that was launched in July 1997 and closed on December 31, 1997 had collected a whopping Rs. 10,050 crore as tax revenue.

India, Nepal Renew Transit Treaty : India and Nepal renewed a transit treaty providing land-locked Nepal access to Indian sea ports through 15 points on the border for another seven years on January 5, 1999.

Rs. 1,74,915 Crore FDI Since 1991 : The Foreign Investment Promotion Board (FIPB) cleared foreign collaboration projects worth Rs. 1,74,915 crore from 1991 to October 1998.

India, Sri Lanka Free Trade Pact : India and Sri Lanka signed a free-trade agreement that will eliminate customs tariffs between the two countries over several years. The deal was signed by India's Foreign Minister, Mr. Jaswant Singh and Sri Lankan President, Ms. Chandrika Kumaratunga in New Delhi on December 28, 1998.

Education And Employment

Public Services MBA Introduced : The Indian Institute of Public Administration (IIPA), New Delhi introduced the one-year Public Services MBA which was inaugurated on August 30, 1999. The programme is jointly conducted by the Department of Economic Affairs, IIPA, Birmingham University and the Civil Services College, UK. It is aimed at equipping middle management cadre of civil service managers with skills to improve the quality of public service and adapt it to the changing environment.

DU's School of Correspondence Courses : The Delhi University has done away with its School of Correspondence Courses. Now it has adopted the Open University system for distance education.

IGNOU Introduces New Degree Programme : The Indira Gandhi Open University (IGNOU) started a new degree programme—Bachelor of Information Technology in collaboration with Edexcel Foundation, UK on May 21, 1999. This is the first

time that IGNOU will be giving a degree based on the curriculum of the internationally-accepted BTEC Higher National Diploma (HND) of UK. Initially, the collaboration will provide "high quality education" with vocational orientation to students in India.

SC Quashes Pre-Enrolment Training For Law Graduates : The Supreme Court quashed (March 15, 1999) the Pre-enrolment Training Rules, 1996, introduced by the Bar Council of India (BCI), which made it mandatory for law graduates to complete one-year apprenticeship under a senior lawyer to qualify for enrolment in Bar Councils.

Upper Age Limit for Civil Services Recruitment Raised : According to an official release, general orders have been issued increasing the upper age limit by two years, from 28 to 30 years for recruitment to Central Civil Services and other civilian posts through direct open competitive examinations conducted by the UPSC or SSC or any other authority. The general order will come into effect from April 1, 1999. The increase in the upper age limit is not applicable to recruitment to Armed Forces or Paramilitary Forces. This will also not be applicable to direct recruitment to any Central Civil Services or civilian posts for which action has already been initiated through advertisement or otherwise before April 1, 1999.

Inventions And Discoveries

Debris of British Era Plane Found : The debris of an army Dakota plane that crashed in 1938 were found near village Ambadi under Sausar Tahsil in Chindwara district of Madhya Pradesh, officials said on October 25, 1999. The plane belonged to the army at that time and was used for carrying mail to Kamptee near Nagpur in Maharashtra, when it crashed. The debris of the plane were noticed after they were found floated ashore in the recent floods.

Buddhist Site Found : The Archaeological Survey of India (ASI) has found a rich Buddhist site at Sanati in Gulbarga district of Karnataka as per the report on August 7, 1999. According to the Director General of ASI, the site bears significance because it is the first time that any anthropomorphic representation of Emperor Ashoka has been discovered with Identifying Inscription.

Nuclear Scientists Develop Zircaloy-4 : Indian scientists and engineers at Hyderabad-based Nuclear Fuel Complex (NFC), a major unit of the Department of Atomic Energy, have successfully developed and produced, for the first time in the world, a critical component for nuclear reactors called Zircaloy-4 (square channel) through the seamless route. The unit produced the square channels for the Tarapur Atomic Power Station, after its supply was stopped by the United States, Canada and Japan following the post-Pokhran-II

sanctions imposed on India. The NFC has already fabricated 80 channels each costing Rs. 5 lakh and sent them to Tarapur. Nearly 100 channels were required for "recharge" of the reactor every year. A huge amount of foreign exchange had to be spent earlier for the import of these channels. South Korea has recently placed an order with the NFC for the supply of *Zircaloy-4* bars for use in nuclear reactors in that country.

Temple Discovered in Khajuraho : Archaeologists have unearthed a 10th century Chandela temple which may have erotic sculptures similar to the ones which have made Khajuraho famous in the world. The Archaeological Survey of India (ASI) which started the excavation on March 6 at a site near Jatkara, 6 km south of Khajuraho, found a two-metre tall and 20-metre wide *Pitha* (plinth) of the temple, decorated with mouldings.

Later Vedic Period Remains Found in UP : Remains of a settlement belonging to the later Vedic period dating back to 1000 BC to 200 AD have been found near Makarbal village in Mahoba district of Uttar Pradesh. The discovery indicates that human settlement in the region continued from the Chalcolithic age to the medieval period despite disruptions caused by change of dynasties.

Miscellany

Businessman of the Century : According to a report published on November 3, 1999, Henry Ford who transformed the automobile from a rich man's toy into the working man's necessity, was named as the Businessman of the Century by *Fortune* magazine. Ford was selected from a series of profiles on 20th century business leaders published in *Fortune* over the past six months. He founded the Ford Motor Co. in 1903 at the age of 40.

Use of Richter Scale Outdated : Ms Lucy Jones, a leading seismologist of the California Institute of Technology (Caltech) said on October 18, 1999 that the Richter Scale, known for decades as the universal measure of earthquakes is now considered outdated and no longer used by scientists. She said that it had been overtaken by more modern scientific methods of assessing the power of earthquakes and the energy released. The Richter Scale was formulated by American seismologist Charles Richter in 1935. It is a long log-arithmetic scale that increases the amplitude of the seismic waves created by an earthquake by the powers of 10 in relation to the scale. Thus, a 6.0 earthquake on the Richter scale is 10 times more powerful than a 5.0 temblor.

Cricket Bat Enters Guinness Book : LG Electronics said on October 26, 1999 that the cricket bat created as a promotional measure for this year's World Cup by the company has entered the

Guinness Book of World Records as the largest of its kind. The bat measuring 15.24 metres in length, 1.82 metres in width and 430 kilos in weight was unveiled at the National Stadium in New Delhi on April 16, 1999.

World's Largest School in a Single City : City Montessori School (CMS), Lucknow has been recognised by the *Guinness Book of World Records*, as the world's largest school in a single city with 23,000 students on its rolls in April 1999.

Most Corrupt Nations and Bribe Payer Nations : Transparency International, the Berlin-based anti-corruption watch dog, in its fifth annual survey released on October 26, 1999 ranked India and Pakistan among the most corrupt countries of the world for the second time in a row. While Denmark with a score of 10 is corruption-free, Cameroon with a score of 1.5, nearest to the Zero represented the highest level of corruption, and was the most corrupt nation. Transparency International has also brought out, for the first time a Bribe Payers Perception Index (BPI) that ranked 19 leading exporting countries in terms of the degree to which their corporations are perceived to be offering bribes abroad. Out of the leading 19 exporters, China (including Hong Kong) is at the bottom as top bribe-payer while Sweden emerged with the cleanest hands. At the bottom of the list just above China are South Korea, Taiwan, Italy, Malaysia, Japan, France, Spain, Singapore, United States, Germany, Belgium, United Kingdom, Holland, Switzerland, Austria, Canada, Australia and Sweden. The survey discovered that Singapore, always landed among the corruption-free nations, is one of the major bribe-giving nations abroad to increase exports.

India to Judge Commonwealth Writers' Prize : The Commonwealth Writers' Prize, given by the Commonwealth Foundation, London, will be judged and awarded in India for the first time. Its award ceremony and the literary events will be held in Delhi from April 10 to 14 in 2000. For this an organising committee which has been formed to look after the preparation for the ceremony will be chaired by writer-diplomat Mr. Pavan Verma and includes Prof. Alok Rai and Ms. Lima Iyengar among others.

World's Highest Hotel : The Grand Hyatt Shanghai, which is described as the world's highest hotel by the Hyatt group and Chinese officials, was formally opened in Shanghai on August 28, 1999. The Five-Star hotel occupies the top 35 floors of the recently completed 88-storey Jinmao Tower, the third tallest building in the world at more than 421 metres in height.

INS Vikrant : The Maharashtra government presented a cheque of Rs. 5 crore to the Navy on

July 29, 1999 for work on dry docking and repair of the de-commissioned aircraft carrier, *INS Vikrant*. The fund is meant to help convert the Navy's former flagship into a maritime museum.

Biggest Desalination Plant : Bharat Heavy Electricals Limited (BHEL) has commissioned India's largest capacity desalination plant on a turn-key basis in the Gulf of Mannar along Tamil Nadu coast. The sea water desalination plant, with approximately one million gallons per day capacity, is expected to cater to the drinking water requirement of over 2.5 lakh people in 296 villages of Ramanathapuram district of the State.

Forbes' Billionaires List : In its 13th annual list of the world's billionaires, in *Forbes'* July 5 issue, the magazine counts a total of 465 billionaires. Bill Gates, Chairman of Microsoft Corp was ranked No. 1 with \$90 billion to his name. The second richest person in the world is Investor Warren Buffett, worth \$36 billion, while Infotech businessman Azim Hasham Premji was ranked as the richest Indian with a net worth of \$2.8 billion.

New National Highways : The Government has declared 14 new national highways aggregating a length of 2,411 km of roads in 11 states. The total length of national highways has now gone up to 51,996 km.

Indian Mountaineers Create History : Indian mountaineers created history on May 28, 1999 when three climbers conquered Mount Everest, the world's highest peak, from the most difficult Kangshung face in north (Tibet side). Led by India's Santosh Yadav—the only woman in the world to have scaled Everest twice—the "Millennium Indian Everest (Kangshung Face) Expedition" 1999 hoisted the Indian tricolour on top of the world. Ms. Santosh Yadav, like many expedition leaders in the past, stayed at the summit camp at South Col and monitored the final scale of the three, touching *Segermathe*—the Nepalese name for Mount Everest—including Sange Sherpa (35), Kushang Dorjee (39) and Amar Parkesh (35).

International Horticultural Expo : The International Horticultural Expo 1999 was declared open in Kunming City, China on April 30, 1999. The Expo was the largest of its kind of this century and the first-ever hosted by a developing country. The Expo with participation of 68 countries and 26 international organisations was expected to attract 10 million visitors over the six months that it was open, including around a million from overseas.

Air India Y2K Compliant : Air India on May 9, 1999 became the first international carrier in the Asia Pacific region to introduce Y2K compliant computers for its cargo section.

Chennai Among World's Cheapest Cities : According to an annual survey released in Geneva

on March 16, 1999 among the world's cheapest cities are Chennai in India, in 148th place, Volgograd in Russia, 149th place, Blantyre in Malawi, 150th place and Harare in Zimbabwe 151st place.

Supreme Court Rules Mother as Guardian of Minor : The Supreme Court in its landmark judgement on February 19, 1999 ruled that the mother can equally act as a "natural guardian of a minor like the father

India, Largest Diamond Processor : India has become the world's largest processor of diamonds, in terms of value and volume.

Youngest Microsoft Certified Professional : Govind Jajoo, the 14-year-old is the youngest person to qualify as a Microsoft Certified Professional securing 87.2 per cent marks in February 1999.

SC Rules Sexual Harassment As Violation Of Fundamental Rights : In a landmark judgement on January 20, 1999 the Supreme Court ruled that each incident of sexual harassment at the workplace is a violation of fundamental rights.

Morse Code Out Of Use : Morse code officially went out of use for ships in distress at sea from February 1, 1999.

It was the target date set by the International Maritime Organisation to replace dials and dashes with a satellite system, the global maritime distress and safety system, that can pinpoint the location of a ship signalling for help. The new system is mandatory for all international freighters over 300 gross tonnes, all passenger vessels and self-propelled oil drilling units. It was 100 years ago that a radio message first set off a rescue mission at sea.

The God Of Small Things Among Top Grossers : Arundhati Roy's Booker Prize-winning novel, *The God of Small Things* was listed third among 100 top-selling books of 1998 released by Britain. The book grossed 4.18 million pounds and a net sale of the book placed it behind *The Partner* by John Grisham and *Titanic* by James Cameron.

Madhye Pradesh Human Development Report Released : The Madhye Pradesh Human Development Report, 1998 was released in New Delhi by Nobel laureate Prof. Amartya Sen, in New Delhi on January 5, 1999. The report is in the form of compilation of micro-level statistics preceded only by the 1995 effort by the same State. While the 1995 report included education, health and gender issues, the 1998 report also dealt with typical rural indices of development like livestock population, availability of veterinary centres, net and gross area irrigated, etc. The famous Pakistani economist, the late Mahbubul Haq, had institutionalised as benchmarks for human

development health, infant mortality, literacy, gender equality among others, which are followed by many countries.

Publication Of Early Upanishads In US : The Oxford University Press and the Centre for South Asian Studies at the University of Texas have jointly published the early *Upanishads* with both text and translation in English.

Projects

Koyna Stage IV Project : The first unit of 4 x 250 MW underground power house of the Koyna State IV Project in the Sahyadri ranges in Western Maharashtra was inaugurated on October 3, 1999. The Rs. 1,200-crore World Bank-aided project, said to be technologically the most advanced hydel project, is an engineering marvel constructed about 1.2 km inside a mountain at Alore village in the Konkan region. The project is the first to have four units of 250 MW each, a capacity of generating 280 MW and even picking up to 315 MW, a micro-processor-based protector system, the use of power cables of evacuation and has an insulated switch-gear protector.

Kaiga Nuclear Power Project : The indigenously-built second unit of the Kaiga Nuclear Power Project attained critically at Kaiga (Karnataka) on September 24, 1999. The 220 MW second unit was expected to be synchronised with the grid in about four weeks.

Kanlmlnke Combined Cycle Power Project : According to a report published on September 22, 1999, the Central Electricity Authority (CEA) has given techno-economic approval to the Kanlmlnke Combined Cycle Power Project to be located on Bangalore-Mysore highway. Promoted by Peenya Power Company, the project is estimated to cost Rs. 390 crore.

Integrated Solar Combined Cycle Power Project : The Central Electricity Authority (CEA) approved an Integrated Solar Combined Cycle Power Project, which would be the first of its kind in the world, said a press report on August 31, 1999.

Cuddalore Power Project : According to the report published on August 25, 1999, the Central Electricity Authority (CEA) has given techno-economic clearance to the Cuddalore Power Project, the largest in the country with an estimated cost of Rs. 6400 crore. The project which comprises two units of 660 mw each, would be installed in South Arcot Vallar district in Tamil Nadu.

Chamera Stage-II Project : Active construction work on the 300-mw Chamera Stage-II Project in Himachal Pradesh has started following an agreement with the Indo-Canadian Hydro Consortium in July, 1999. The project is estimated

to cost Rs. 1,900 crore and is to be completed within five years. The project is located on the Ravi near Chamba and its main components are a 39 metre high concrete dam, a 7.86 km long head race tunnel, an underground power house comprising three units of 100 mw each and a 3.6 km long tail race tunnel.

Nathpa Jhakri Power Project : Nathpa Jhakri Power Project in Himachal Pradesh which is under construction is the country's largest underground hydel power project, its power plant is also perhaps the most environment-friendly, with the largest water diversion tunnel in the world. It is expected to generate an ambitious 6,700 million units of energy and provide 1,500 mw of power to the Northern Grid. The project is expected to be completed by June 2000 at a cost of Rs. 10,000 crore.

Project Tiger : The Government has decided to add two more areas to the Project Tiger, Nameri-Pakhul Inter-State Tiger Reserve in Assam and Arunachal Pradesh (about 1,000 sq. kms area) and Satpura Bori and Pachmarhi Tiger Reserve in Madhya Pradesh (15,000 sq. kms). During the Ninth Five-Year Plan two more areas—Udanti Wildlife Sanctuary and Achankmar Wildlife Sanctuary, both in Madhya Pradesh, will be included in the Project Tiger.

Dabhol Power Project : India's largest independent power project was inaugurated on May 25, 1999 with the first phase of Enron's Dabhol Power Project commencing its operations.

Suratgarh Thermal Power Project : The Central Electricity Authority (CEA) sanctioned the second phase—comprising two units of 250 MW each—of the Suratgarh Thermal Power Project on May 20, 1999 in Rajasthan.

Salal Hydro-Power Project Stage-I : The Cabinet Committee on Economic Affairs (CCEA) on May 4, 1999 took a decision on proposal for renovation and modernisation of the Salal Hydro-Power Project Stage-I in Udhampur District of Jammu and Kashmir. The project with an investment of Rs. 61.47 crore and having an installed capacity of 345 mw, will have a debt-equity ratio of 1 : 1. The project is designed to generate around 2038-megawatt units per annum.

Duburi Thermal Power Project : The Central Electricity Authority has approved the two 250 megawatts Duburi Thermal Power Project at a 'completed' cost of Rs. 2190 crore achieving a sizeable reduction of Rs. 300 crore as compared to the promoter's original proposal of Rs. 2490 crore.

Feroze Gandhi Unchahar Thermal Power Project : The National Thermal Power Corporation (NTPC) has commissioned the third unit of the Feroze Gandhi Unchahar Thermal Power Project

of 210 MW capacity on January 27, 1999, ahead of its schedule. Unchahar having two units of 210 MW in the first phase was taken over by NTPC from Uttar Pradesh Rajya Vidyut Utpadan Nigam in 1992.

National Integrated Highway Project : The National Integrated Highway Project was launched by the Prime Minister, Mr. Atal Behari Vajpayee with foundation laying ceremony for six-lane carriageway of Bangalore-Hosur Section at Singasandra, 15 km from Bangalore on January 2, 1999. Launching the project, Mr. Vajpayee said that the Government would seek active participation from the Indian private sector and the foreign investors to make investments in the mega highway project.

Science And Technology

Vaccine Withdrawn : According to report published on October 18, 1999, Rotashield, world's only vaccine against infant diarrhoea was withdrawn from the market by its manufacturer amid fears that it could increase infants' risk of dangerous bowel obstruction.

Drug for HIV Patients Showing Positive Results : According to a report published on October 24, 1999, a drug derived from a tree called *Bintagor* has shown positive results when tested on eight Human Immuno-deficiency Virus (HIV)-positive patients in Singapore. The effectiveness and safety of the drug was studied during a two-week trial last month by the Communicable Disease Centre in Singapore as well as in centres in Malaysia and the US.

Medicine for Arthritis : According to a report published on September 20, 1999, the first medicine in the world made from wild ants to treat rheumatoid arthritis has been licensed by China's state drug administration. The medicine developed by Dr. Wu Zhicheng at the Jinling Geriatric Hospital in Nanjing, capital of east China's Jiangsu province is now under trial production at a local factory.

New Heavy Water Reactor Designed : Indian atomic scientists have designed an Advanced Heavy Water Reactor (AHWR) that will use thorium found in Kerala's beach sands as the fuel. Dr. Anil Kakodkar, Director of Bhabha Atomic Research Centre (BARC) told visiting groups from the Indian Science Writers Association (ISWA) : "Globally people are evolving innovative reactor systems, not only in Asia where the nuclear energy programme is growing, but also in the US where it has reached a plateau." Most of India's nuclear power plants are based on Pressurised Heavy Water Reactors (PHWRs) that use natural uranium as fuel and heavy water as moderator and coolant. While the new reactor's systems are basically meant to be

simpler and safer to operate, and more "operator-friendly"—that is the design ensures that there is sufficient time for the operator to react and think of emergency action in case something goes wrong. The AHWR using thorium as fuel is a unique concept to India, which has the world's largest thorium reserves. "It will use heavy water as a moderator and light water as a coolant", said Dr. Kakodkar.

New Virus Menace To Computers : A new computer virus, *Melissa* which is one of the fastest-spreading computer viruses in history transmitted via E-mail, is threatening to wreak havoc and paralyse computer systems around the world. *Melissa* which started spreading in the afternoon of March 26, 1999 has already forced nearly 60 major companies and organisations in the United States to shut down their E-mail systems.

N-Tech To Derive Potable Water From Sea : Scientists at Bhabha Atomic Research Centre (BARC) have developed nuclear technology which can derive potable water from the sea. This could provide a permanent panacea to perennial water scarcity problem in the States like Tamil Nadu, Gujarat, a few inland areas in Andhra Pradesh and deserts of Rajasthan.

Chemotherapy Plus Radiation To Fight Cervical Cancer : In the first breakthrough in the cervical cancer treatment since the 1950s, a series of studies disclosed on February 22, 1999, found that adding chemotherapy to radiation can reduce the risk of death between 30 per cent and 50 per cent compared with radiation alone during follow-up periods ranging from three to eight years. The combinations involving the drug *cisplatin* appeared to work best. The studies were conducted by National Cancer Institute, Boston.

New Paintfree Device May Eliminate Need For Biopsy : According to a report in the British periodical *New Scientist*, a new fast three-dimensional imaging device, called Hall Effect Imaging (HEI), developed by the US scientists at the National Institute of Health, Bethesda, Maryland, may eliminate the need to painful biopsies in the diagnosis of cancer. The device uses ultrasonic emissions to highlight the variation in electrical conductivity between healthy and diseased tissues.

First Hand Transplant : American doctors have performed the first hand transplant in the United States. After nearly 15-hour long operation on January 25, 1999 surgeon Warren Breidenbach and his colleagues in Louisville Jewish Hospital managed to implant the hand of a dead man to Melhew David Scott who had lost his own during a fire cracker accident 13 years ago.

Space Research

NASA Produces Radar Map of Antarctica : According to a report published on October 20, 1999, US space agency, National Aeronautics Space Administration, has produced the first high resolution radar map of Antarctica, showing networks of ice streams, volcanoes and sedimentary rock, the map was formed from information gathered during 18 days in 1997 by a Canadian satellite, *Radarsat*, launched by NASA.

Orion-2 Placed in Orbit : A US Communications satellite, Orion-2, was placed in orbit by an Ariane rocket on October 19, 1999. The satellite, weighing 3795 kg, was put into orbit 22 minutes after lift-off. It will be positioned above the Atlantic Ocean where among other things, it will be used to transmit data and television signals to areas lacking sophisticated communication infrastructure.

Ikonos Photos Available : Ikonos, the satellite which was launched by Space Imaging Inc., a private Colorado-based firm, from Vandenberg Air Force Base in California, on September 24, 1999, is now in a polar orbit, eventually covering every spot on Earth as the globe revolves beneath it, orbiting the world every 98 minutes. The photos have a resolution of one metre, so even an amateur photo-analyst can distinguish between a car and a bus (or between an armoured tank and a truck, a

military plane and a commercial airliner). Space Imaging now has applied for a licence by the US government to take and sell satellite photography with a resolution of half a metre, which makes it precise enough to discern images of people. Space Imaging is \$700 million joint venture led by Lockheed Martin Corporation and Raytheon Co. and includes corporate investors from Japan, South Korea, Singapore, Thailand and Sweden. Ikonos is built by Lockheed Martin Commercial Space Systems.

Stunning Images from Chandra X-ray Observatory : NASA announced on September 28, 1999 that a never-before-seen ring of X-rays has been discovered surrounding the heart of the massive crab Nebula in space. The ring was revealed by the two-month-old Chandra X-ray observatory. The finding, combined with other observations, may provide clues as to how a powerful neutron star provides energy to the Nebula. The crab Nebula, located about 6,000 light years from Earth in the constellation Taurus, is the remnant of a star that was observed to explode in AD 1054.

Mir Full-Time Crew Returns To Earth : The final full-time crew of Russia's *Mir* space station landed safely in a deserted steppe in Kazakhstan on August 28, 1999 after bidding farewell to the

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13-year-old orbiter as a prelude to its abandonment in 2000.

Columbia Blasts off with Chandra : The American space shuttle *Columbia* blasted into space from the Kennedy Space Center, Florida, Cape Canaveral on July 23, 1999 to launch the four-storeyed Chandra X-ray observatory (named after the India-born Nobel Laureate Dr. S. Chandrasekhar.) in orbit to examine the most powerful sources of X-ray in the Universe—black holes, colliding galaxies and remains of super-nova. It was a milestone in the space history as Colonel Eileen Collins became the first woman to command a space mission. NASA took 38 years to put a woman in charge of a space mission. *Columbia* returned to earth on July 28, 1999 after a 5-day mission.

Space Applications Centre : The Union Cabinet approved the establishment of North-Eastern Space Applications Centre (NE-SAC) at Shillong which will be a joint initiative of the Department of Space and North Eastern Council (NEC).

PSLV-C2 Launches IRS-P4 and Two Foreign Satellites : Polar Satellite Launch Vehicle (PSLV)-C2 carried India's IRS-P4 (Oceansat) and two foreign satellites including, South Korean Katsat-3 and German Tubsat in their respective orbit from Sriharikota on May 26, 1999. The launch of IRS-P4 is the eighth in the series and the first one to be dedicated for ocean studies. It is called Oceansat-1 because it carries a ocean colour monitor and a multi-frequency scanning microwave radio-meter for ocean-related applications.

ISRO Enters Global Space Market—Transponders Handed over to Intelsat : Indian Space Research Organisation (ISRO) on April 27, 1999 entered the lucrative space market as International Telecommunications Satellite Organisation (Intelsat) signed a nearly Rs. 500-crore agreement with it for hiring transponders on the recently-launched Insat-2E. Under the agreement, ISRO will lease out nine transponders at \$10 million each for 10 years, with the option of extending the lease by another two years. Mr. Conny Kullman, Director General and CEO of Intelsat who handed over to ISRO Chairman Dr. K. Kasturirangan a cheque of \$0.68 million as advance payment, said that it was the first time that Intelsat was hiring transponders from an outside agency.

First Space Helicopter : The first helicopter Roton designed to fly into space has been built. The Roton prototype is 60ft tall and will be used in low-altitude flight tests to develop its novel rotor blade and its landing and take-off system. Rotary Rocket, is the Californian company behind the Roton.

Part III

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TOPICS OF THE YEAR

Essays on burning topics of the day form an important paper in many of the competitive examinations. The essay paper which formed part of the written examination of the Civil Services in 60s and earlier and which has been reintroduced lately underscores the need for candidates to be well-equipped with facts and views on subjects concerning politics, international affairs, economic affairs, social changes, scientific breakthroughs and sports. We are presenting in this booklet a collection of essays on select topics. We are sure that the material provided would be of ample use to candidates not only in writing essays but also in securing success in interviews, debates, group discussions and elocution contests.

1. Pakistan Under Military Rule

The Army chief has done it again. Throughout its history Pakistan has witnessed its shaky democracy being held hostage by the army top brass whenever it chose to strike. The frequency with which military juntas have been pulling down legally elected governments not only shakes the democratic roots in Pakistan, but poses a grave threat to India. At least two wars with India were fought when the generals were in power : Ayub Khan and Yahya Khan. For India, the coming to power of Gen. Pervez Musharraf spells an uneasy future for Indo-Pak relations. Here is a General who sabotaged the Lahore peace initiatives and became the brain behind the Kargil conflict. Can India afford to trust this new usurper who caused a blood bath in the Kashmir Valley ?

No wonder India has become extra cautious in every move with Pakistan under the generals. The man who plotted the Kargil operations, Gen. Musharraf abhorred the idea of any kind of withdrawal of Pakistani troops or the militants from this side of Line of Control. One of the architects of the "proxy war", the self-styled Chief Executive of Pakistan never condoned Nawaz Sharif for the latter's daring move to befriend India starting with the Lahore Declaration. When Mr. Nawaz Sharif and Mr. Atal Behari Vajpayee were together in Lahore healing the festering wounds left in the wake of the bloody Partition, Gen. Musharraf was drawing the blueprint for the fourth war with India.

The military ruler of Pakistan seems to be in no hurry to restore civilian rule in Pakistan and has not bothered to reassure his Western allies as to when he would pass the scepter to the leader of

any civilian government. He has taken a series of steps against the leaders of major political parties like freezing their bank accounts to win popular favour. One of the reasons for the partial popular jubilation over the army takeover could be that Nawaz Sharif had exceeded the scope of the popular mandate by interfering in the judiciary and harassing the media. He did several other acts too that made sections of public opinion disenchanted with him. But none of these factors justifies the army coup. And it may take some time for the people to react to the rigors of the regimentation that military rule entails as also for Ms. Benazir Bhutto and the cricketer-turned politician, Mr. Imran Khan to realise that there is little to gloat over the fall of their adversary, Mr. Sharif. With Mr. Sharif's deposition synchronised the fall of the judiciary, the basic institutions that sustain democracy and the fundamental freedoms of the people. Let the people of Pakistan ask the people of Myanmar, groaning under the tyranny of a military leadership that hijacked the results of an election and put under virtual house arrest a young woman revolutionary, what freedom means. The people of Indonesia who saw the birth of democracy in the election of Mr. Abdurrahman Wahid as their President and Ms. Megawati Sukarnoputri as their new Vice-President have known through the trials and tribulations under the Suharto regime what they have lost and what they have gained. In fact, Pakistan has not to look at the distant horizon : it can see the success of Indian democracy, despite a lot one could say about the ways of its politicians. The elections, notwithstanding the dominating presence of money

power and muscle power, have given an opportunity to the common masses to reject the leadership unworthy of their trust and accept those who can be trusted to carry out the responsibility of governance. The people have rejected titans like Indira Gandhi and great parties like the Congress and accepted parties and people that have not gagged the will and freedom of the people. The rest of the world appreciates that the largest democracy in the world has come to stay.

In the days ahead, USA may continue the dialogue with India as to how best the two can work together to help Pakistani people return to the days of civilian rule. US President, Mr. Bill Clinton and Prime Minister, Mr. Atal Behari Vajpayee have already exchanged views on this vital common denominator through their trusted lieutenants and directly too. Washington would like to nurture the withering plant of democracy in Pakistan by coming closer to India. It took the first step in this direction by announcing the waiver of the economic sanctions imposed against India in the wake of the nuclear tests conducted by her last year. The USA also agrees with India that Pakistan must stop crossborder terrorism before it can ask for resumption of a dialogue with India.

All the same, for the time being, India and the rest of the world are monitoring the developments in Pakistan with all the seriousness these merit. In the context of the Kargil conflict, the sabrerattling of the new military leadership in Pakistan and the recent pronouncements by Gen. Musharraf, India

needs to be eternally vigilant. Nothing can stop the military dictator from undertaking yet another military misadventure against India. One thing is absolutely clear : things could be worse for Pakistan both at the home and foreign fronts. The Army cannot save Pakistan. For nearly 25 years Pakistan was ruled by its own armed forces who should share the blame for the political, economic and social ills plaguing the country. It was Gen. Zia-ul-Haq who deepened the Islamisation of Pakistan that has in later years made Pakistan one of the capitals of fundamentalism and a hotbed of international terrorism. Almost all the extremist outfits destabilising the peace in Kashmir, the Central Asian Republics, Chechnya and Dagestan in Russia and the Sinkiang province in China have their head offices in Pakistan. These destabilising forces and more particularly, the formidable Taliban that rules ninety per cent Afghanistan, will gain greater moral and material support under the new dispensation in Islamabad.

India and the rest of the world have to guard themselves against the fallout of the military rule in Pakistan. Despite pious declaration on unilateral withdrawal of forces from international border with India, the General is at his favourite game to destabilise peace in J&K by open confrontation as well as proxy war through trained militants as is evident from attacks on army cantonment in Srinagar and attempt to capture Indian posts on LoC in November 1999. According to the General, Kashmir is top-priority for any Indo-Pak dialogue. □

2. Orissa Cyclone And Disaster Mismanagement

No authority will ever be able to count as to how many precious lives were buried in the watery grave that the devastating super cyclone spawned in the eight coastal districts of Orissa during the last week of October 1999. The fury of nature left a swathe of destruction in the entire coastal region including the capital city of Bhubaneswar. The enormity of havoc was so much that others in the rest of India and the world did not know what was happening in the ravaged region which was virtually impregnable what with a wind speed of 250 km twisting power and telephone lines and uprooting trees and even destroying railway tracks in the districts of Puri, Kendrapara, Khurda, Jagatsinghpur, Nayagerh, Bhadrak, Balasore and parts of Dhenkanal. Tidal

waves rising up to 25 to 35 feet swept away all life—human, animal and plant.

Several hours after the fury subsided, political leaders who wanted a first hand account of tragedy, the relief teams and the local people saw bodies and carcasses floating on vast sheets of water, once home to many. The survivors have lost all—their kith and kin, their farms, their homes, access to food and the will to live. And people, smitten by hunger, looked for food that came in dribbles and too late. A helpless people fought with the police and relief teams for their essentials. Many of the survivors, mostly women and children, faced the second wave of death as epidemics threatened to snuff out life. Life in a greater part of Orissa came to standstill.

Orissa cyclone was declared a national calamity by the Prime Minister and soon official and non-official agencies were at work providing immediate relief and restoring communications. Many NGOs and sections of media have started their own Orissa Cyclone Relief Funds.

But everyone knows that the shattering cry for help—for shelter and the means of starting life anew and other vital needs—will sink into a feeble wait and whimper, as bureaucracy's wheels would creek to a dead stop as people would soon forget the helpless victims of yet another calamity. Should the people of Orissa, or for that matter, the people of the coastal States hit by cyclone continue to pay a heavy price year after year just because authorities do not show enough care to manage these natural disasters? It may not be possible to prevent natural calamities, but it is possible to prevent, to a large extent, the large-scale human suffering, had steps been taken in such areas as housing. It is the poor who always have to pay a high price in times of natural calamities. One might recall that coastal Andhra that was hit by a cyclone two decades ago, killing more than 20,000 people, took several steps including cyclone-proof housing.

It is high time that both the Central and State Governments lend to the critical subject of disaster management all the immediate attention it deserves. It would be sheer cruelty to the people if the powers-that-be react to calamities in a knee-jerk fashion. Cyclones are an annual scourge and they will return next October-November too and none can predict the next scale of destruction. But with adequate will, with the support of the community, NGOs and every department of the government, calamities can be faced and the scale of human misery reduced to the minimum.

Disaster management plans should be of a permanent nature and the ordinary people and NGOs would be only too willing to cooperate if only

government officials are willing to come forward with sincerity and dedication. But in India official bungling is notorious in handling both short-term and long-term disaster management plans. Be it man-made disasters like the Bhopal gas disaster or natural disasters like floods, earthquake, drought or cyclone, government has no well-formulated plans to alleviate human misery. We know only to mismanage disasters. Millions of victims, for want of official help during times of distress in the wake of a natural calamity migrate to the city, hoping for a better life, but end up in yet another cycle of urban poverty.

It would be worthwhile that both the Centre and the States start thinking in terms of having a separate department of disaster management that deals with the exclusive subject of disaster management. Such departments could deal with the rising number of man-made disasters like train accidents, air crashes, bus accidents and boat tragedies, fire accidents, involving a large number of people, stampedes as in the Kumbh Mela several years ago and Sabarimala last year, apart from the consequences of the natural calamities that destroy human life and property. Forewarned of the disaster is well-armed, and where prevention is not always possible, it is the duty of the government to organise and manage short-term and long-term relief that reduces human misery to the maximum extent possible. Let India plan and prepare before the next calamity takes her the unguarded way.

We call ourselves one nation sharing our joys and sorrows, trials and tribulations together. Yet when thousands of our brethren were dying without a morsel of bread in Orissa, we were right in the heart of India – Delhi indulging in feasting extravaganzas, exploding crackers and lighting our homes to the hilt. What a shame! Could we not donate our Diwali expenditure to our helpless brethren in Orissa? □

3. Global War On Terrorism

For ten years and more, the serenity of the Kashmir Valley has been disturbed by gunfire and the access to some of the most beautiful spots in the world has been denied to tourists from within the country and abroad. Worse still, enemies from across the border sowed the seeds of discord and hatred between communities in the name of religion, driving the Hindu Pandits out of their moorings to seek sanctuary elsewhere in India. People have lost count of the killings, massacres, lootings, kidnappings and other heinous crimes in the course of the last ten years, all perpetrated by the hardcore

militants—trained, armed and transported by India's neighbour Pakistan which has now become a *de facto* "terrorist" state, though its allies refuse to recognise its *de jure* status as the springboard of international terrorism due to their own enlightened self-interest. Hundreds of civilians and members of India's security forces, the BSF and the CRPF have paid with their lives for the proxy war waged by Pakistan.

The Kargil War was the grand climax of the systematic and sustained campaign of terrorism Pakistan has been waging against India. Even

during the war and thereafter there has been no let-up in the scale of violence and bloodshed let loose by the Pak-trained terrorists. For over a decade, India has been crying hoarse about international terrorism, but none paid any heed to her complaints. Things are now slowly changing and even USA and Russia are now veering round to India's viewpoint that they should mount a united front against terrorists training their guns at the heart of the stability of their countries. The US concerns were triggered by June 1996 bomb attack on its military personnel in Dahran in Saudi Arabia. The bomb attacks on the US Embassies in Nairobi and Dar-es-Salaam in 1998, allegedly masterminded by the Saudi millionaire, Osama bin Laden, from his hideouts in Afghanistan convinced Washington that international co-operation is a prerequisite to curbing state-sponsored terrorism.

Next to India, the worst country to bear the brunt of terrorism this year has been Russia that lost more than 300 people in the bomb blasts that destroyed many apartment blocks in Moscow and other urban areas. Russia traced the hotbed of terrorism as originating from the basis of disgruntled elements in Chechnya and Dagestan; on closer scrutiny, Russia found that it was all the handiwork of mercenaries trained in Pakistan and Afghanistan. And the mastermind again was once again the dreaded Osama bin Laden! Russia protested to Pakistan in vain. A desperate Russia took things seriously and launched both a combined air and land assault on Chechnya to flush out the terrorists presumably shielded by the government of the breakaway Chechnya.

On September 17, 1999, Osama bin Laden added India to USA as the two countries against which he and his followers have declared 'jihad'. A Press release issued in Jalalabad said India and USA were the *mujahideen's* "biggest enemies" and they would target these "imperialist" forces wherever possible. He has been also extending all sorts of support in the form of trained Islamic zealots, material, arms and equipment to secessionist Islamic rebels in Dagestan and Chechnya; thus posing a threat to Russian Federation. He said he was ready to help the Kashmiri *mujahideen* and he did "help" them during the recent Kargil War. India can ill afford to ignore the threat of Osama bin Laden and India's Home Minister, Mr. L.K. Advani said that India would take every step to meet any eventuality. Defence sources in India are aware that bin Laden has an unspecified number of US Stinger missiles, the Russian-made SAM 7 surface-to-air missiles and vast quantities of sophisticated small arms. And when he has the backing of Pakistan, why on earth bin Laden should worry at all about the arms for his 'holy war'. There is now enough

flourishing business in drugs trade and they have enough money to buy arms.

Against this background, glowing tributes should be paid to the farsightedness of the Prime Minister, Mr. Atal Behari Vajpayee and the astute diplomacy of Mr. Jaswant Singh in taking up the diplomatic initiative to forge concerted action to fight international terrorism with its "deadly cocktail of violence, religious extremism and narcotics trafficking." On September 17, 1999 India and the United States began high consultations to find ways of countering the looming spectre of terrorism across the world. The US Coordinator for Counterterrorism, Mr. Michael Sheehan met Indian officials to define common parameters for bilateral co-operation to prevent terrorist bombings. USA is keen on evolving an international legal framework to punish terrorists. This includes proposals for extraditing suspects or the right to prosecute them in third countries. Both India and USA also discussed the terrorism in Kashmir and the rapid spread of extremist violence from Afghanistan into the Central Asian States which include Kyrgyzstan and Tajikistan and the Moscow blasts, all seen as part of the terror network spreading across the globe from Afghanistan and Pakistan.

In recent months, USA has reprimanded Pakistan, at least behind the scene, over its naked support for terrorists in Kashmir. It is an open secret that the terrorists could not have held Kashmir to ransom for so long without the material support of Pakistan. How far USA is prepared to take on Pakistan in its war on terrorism without jeopardising its traditional relations with Islamabad remains to be seen. The issue of terrorism and how to fight it through fora like the UN Security Council was a major item in the agenda of the discussions held between India's External Affairs Minister, Mr. Jaswant Singh and his Russian counterpart, Mr. Igor Ivanov, during the UN General Assembly deliberations in New York in September, 1999. At the UN itself India signed on September 18, 1999 the International Convention for Suppression of Terrorist Bombings. Once ratified, the convention will enable the countries to either prosecute or extradite those accused of terrorist bombings. India is the 47th country to sign the convention which has been so far ratified by only six nations. It needs ratification by 22 countries to come into force. The convention was adopted by the UN General Assembly in December 1997.

It is now India's finest hour with the growing worldwide awareness on the dangers of international terrorism. No country can afford to remain complacent with the mad exporters of terrorism even daring to steal nuclear material to do their dirty and heinous job. One should hope

that USA and Russia, together with other Permanent Members of the UN Security Council (including China which is also facing threat from Islamic fundamentalists in its Xin-jiang province) would join together to tackle the international

blackmail at its very source. However, China's indifferent attitude in this vital issue of international import is regrettable. It still wants USA not to condemn the military rule in Pakistan which is bound to inflame international terrorism. □

4. China At Fifty : An Appraisal

Together with Indian Independence in 1947, the ascendancy of the Communists to power in China marked a watershed in the history of the world, highlighting the resurgence of Asia and the retreat of colonialism and Imperialism. India celebrated the Golden Jubilee of her independence in August, 1997 China too is celebrating the 50th birthday of the Communist Revolution. While Gandhiji led the march to freedom at midnight, Mao as the leader of China's millions brought to a close the long century of China's 'humiliation' by imperialist powers, including Japan. There couldn't be any comparison between Gandhiji and Mao, though both played distinctive roles in moulding the future of their countries. Just as Gandhiji left his inimitable stamp on every facet of Indian life, the father of the Communist Revolution too had revolutionised the Chinese social, economic and cultural life. For good or bad in fifty years, China has matured as a powerful economic and military giant that is sure to throw its weight in the new millennium.

In the avalanche of criticism over the excesses of the Cultural Revolution, the Great Leap Forward, the regimentation of a closed society and the massacre at the Tiananmen Square, the rest of the world underestimates China's stupendous achievements. Most of the Sinologists are so carried away by the achievements of the last twenty years that they tend to ignore the substantial contribution made by Mao Zedong. Beyond doubt, it was on the firm foundation laid by Mao Zedong that Deng Xiaoping raised the superstructure.

Whoever has been the Chinese leader and whatever be the reforms they sought to achieve in the last fifty years, there are certain motivations that underlie every Chinese action. It is this distinctive Chinese psyche that strikes China observers most and that should inspire the developing countries including India. High ambition to become an important power in world politics, Iron resolution, discipline, dedication and perseverance, adherence to the small family norm, Importance of education and literacy, and the belief that they know much better than anyone else as to what is good for them and high individualistic and independent thinking and reverence for Chinese values have been the hallmark of every programme

China undertook be it political, economic, social and cultural. It is not the sheer number of 1.2 billion people only, but the fact that the Chinese *believed* that they were, are and will be a great people and this unshakeable faith in their own greatness that permeated their domestic and foreign policies and their relations with USA and USSR (now Russia) and other countries, big and small. The Chinese wanted the rest of the world to treat them for what they are, no less and no more.

Wherever they floundered, they were prepared to learn from their mistakes and mend matters. The Chinese leaders spoke with authority on matters they considered right whatever the rest of the world might construe about their actions. And they had the cheek to tell the World Bank and IMF to mind their own business when both of them talked about corruption in China. It was Mao who instilled the national pride in every Chinese, uniting the nation and raising his country to a standing of equality among the nations.

Fifty years on, China is slowly getting back the territories that, China believes, belong to her. Hong Kong became part of China in a smooth transition in 1997 under the innovative one-country, two systems formula, and so will be Macao by the end of this year. There cannot be two Chinas ... the Dragon spitting fire and brimstone on the mainland and the puny Taiwan propped up by USA for more than two decades. Both USA and Taiwan must yield to the overwhelming currents of geopolitics and let Taiwan become part of the mainland under the same formula that holds valid for Hong Kong—one country, two systems.

The way China stormed the citadel of power politics shows its 'never say die' spirit. For 23 long years US intransigence barred Chinese entry into the UN and today it is one of the five Permanent Members of the UN Security Council. In five decades China has achieved an average annual growth rate of 9.8 per cent. In 1997, its gross domestic product (GNP) reached \$ 1,055 billion, making it in terms of purchasing power parity (PPP) the third largest economy in the world. Per capita income rose to \$ 860, having doubled over the past decade; adult literacy rose to 87 per cent and average life expectancy climbed to 70 years. In just 25 years,

China has attracted a direct foreign investment of \$ 140 billion and has accumulated foreign exchange reserves of \$ 120 billion and a trade surplus with the US of about \$ 40 billion. Striking statistics that should inspire our planners and administrators!

Take any field and the average Chinese is possessed of the "killer instinct". In the last Olympics, the Chinese, with their record-breaking medal haul, replaced Japan as the fourth country with the largest number of medals.

While making the most of the best from our neighbour across the Himalayas, India needs to gain a lot by leaving the past and opening a new chapter with China. Even China is keen to settle the border dispute with India and start things anew; they have already settled the border disputes with

Russia and the Central Asian Republics. During the first ever visit to India of a Chinese head of state in 1996, Mr. Jiang Zemin said: "We, the two great nations of wisdom that pioneered human civilisation, will surely bring a cooperative and constructive partnership into the 21st century."

As India and China are about to enter the threshold of the new millennium, one should hope that under the dynamic leadership of Mr. Atal Behari Vajpayee and the diplomatic skills of Mr. Jaswant Singh, a new twin star will rise on the International firmament provided China sheds its pro-Pakistan stance, dilutes its rigid stand on Tibet and settles the border dispute on reasonable terms. In fact together with Russia, India & China can form a mighty alliance against unipolar USA. □

5. Merit Must For Higher Education

Casteism has been the bane of Indian society compelling Swami Vivekananda to describe certain parts of India stigmatised by caste compartmentalisation as virtual 'lunatic asylums' and forcing Gandhiji to identify himself and his life with the cause of the lost and last in the hierarchy the Indian social life had been reduced to. An independent India sought to put into the statute book the concern and solicitude of savants like Swami Vivekananda, Mahatma Gandhi and B. R. Ambedkar for the down-trodden. But in the last twenty years, a new breed of politicians has been making capital out of the caste system painting themselves as the messiah of the underdog while their real motive has been how to swell their votebanks. Instead of eradicating the caste system, these narrow-minded politicians have only tended to create sharp divisions pitting one section of the people against another.

In the maelstrom of declining values, state governments run by different political parties have been trying to outwit one another by populist policies to pander to different castes. The worst casualty of a caste based politics at different levels has been quality, which cannot be ensured by reservation. Were Gandhiji and Dr. Ambedkar alive today, they would not have subscribed to a kind of social justice that neutralises quality and meritocracy at the highest level. The economically poor in the general category who excel in examinations tend to be marginalised in admissions to higher courses and entry points to jobs and they are compelled to bear the cross. Even the so-called poor castes too tend to lose ultimately if they are pampered to a nauseating degree by politicians and state governments who are even prepared to fix a minimum percentage of 20 marks or even less for

admission to speciality courses. Such an approach is not social justice, but a mockery of education, quality of education, meritocracy and warped form of social justice.

Against this backdrop, the historic judgement made by the Supreme Court of India on August 11, 1999 that for admission at the super speciality levels in medicine and engineering faculties, no special provisions like reservations for Scheduled Castes, Scheduled Tribes and Backward Classes are permissible would be welcomed by all those who emphasise equality, merit, hard work and perseverance of millions of students to come up in life the hard way and the parents who sacrifice their all to help the wards—their only assets—to make a mark.

The Apex Court felt that reservations of any kind for higher education ran counter to predominant national interests. The Supreme Court bench comprising Chief Justice Dr. A.S. Anand, Mr. Justice S. B. Majumdar, Mrs. Justice Sujata V. Manohar, Mr. Justice K. Venkataswami and Mr. Justice V. N. Khatre who disposed of a batch of appeals, writ petitions and review petitions concerning admissions to the medical and engineering courses in various states felt that merit alone can be the basis of selection. "Admission to the highest available medical courses in the country at the super speciality levels—where even the facilities for training are limited—must be given only on the basis of competitive merit. There can be no relaxation at this level."

The Constitution Bench of the Apex Court in the "Post-Graduate Medical Entrance Examination (PGMEE)—Reserved Categories—lower minimum qualifying marks case" struck down as unconstitutional the Uttar Pradesh PG Medical Education (Reservation for SC, ST and OBC) Act

1997 which fixed 20 per cent as minimum qualifying marks for reserved category candidates belonging to SC and ST at the PGMEET. The judgement also set aside a Madhya Pradesh government order dated June 7, 1997 which fixed the minimum qualifying marks of 20 per cent, 15 per cent and 40 per cent for the reserved candidates of SCs, STs and OBCs, respectively, at the PGMEET, to make them eligible for counselling and admission.

The Supreme Court held that there could not be a wide disparity between the minimum qualifying marks prescribed for general and reserved category students even for admission at the post-graduate level of medical education. The Court directed the Medical Council of India (MCI) to examine whether the minimum qualifying marks for reserved category candidates could be prescribed at the post-graduate level of medical education. The Judges felt that the purpose of reservation, if permissible at the post-graduate level, is to ensure that the reserved category candidates with the requisite training and calibre may benefit from the post-graduate medical courses and rise to the standards which are expected of persons possessing post-graduate medical qualification should not be denied this opportunity by competing with general category candidates.

The 70-page majority judgement said that it is necessary in the public interest to ensure that the candidates, at the post-graduate level have not just passed the examination but have profited from their studies in a manner which makes them capable of making their contribution and diagnosing difficult

medical conditions with a certain degree of expertise.

It may be recalled that in the Sadhana Devi case, the Apex Court in 1997 had held that while laying down minimum qualifying marks for admission to post-graduate courses, it was not open to the government to say that there will be no minimum qualifying marks for the reserved category candidates. "If this is done, merit will be sacrificed altogether," the Court had said then.

It is high time that true to ground realities and for the inevitable need to prove to all that the State does not discriminate against any citizen, political parties should not seek to cash in on the concept of reservation for gaining political mileage. Populist measures to secure short-term ends would be counter-productive and a wrong step taken by myopic political parties will under the system and not unite it. The facade of social justice that such populist measures seek to justify will not only bring down standards to abysmally low levels, but perpetuate the caste stratification and the evils innate in it. The ruling of the Apex Court is a warning on the wall and one can ignore it at one's own peril. And within 2 months of Apex Court's judgement, Jats of Rajasthan and Delhi have been included in the OBC's for job reservation purposes. The Delhi Jats who had become quite rich through acquisition of their land by DDA or sale to private colonisers following increasing residential needs for the sprawling capital, too have been included in this category due to vote-bank politics through the machination of a Chief Minister of their clan. □

6. A Billion Indians !

The crowding syndrome stalks us everywhere : crowded streets, jam-packed buses, the long queues at the railway reservation counters, the winding beeline of anxious parents at nursery schools to get just an admission form for their children, the perpetual struggle to secure admission in professional colleges, the long wait for LPG connection—the litany of woes is the symptom of a malaise from which our country seems to be never free. The swelling tide of human numbers seems to submerge all our gains and keep India shackled in chains socially and economically.

We seem to be getting nowhere in slowing down our population juggernaut with successive governments at the Centre and in most of the States giving scant regard to a problem that merits top attention. The draconian measures like compulsory sterilisation that stigmatised the family planning programme during the dark days of Internal Emergency, with a high-profile son of Indira Gandhi,

ramming down the throats of people concepts even before they were ready, left what could have been a people's programme into the lurch. And there it is, like some railway wagons gathering rust in the marshalling yard. None talks about population control the way they did before 1975, though the threat of the ticking bomb is ominous as ever before. Like some wild weed, the problem is growing fast endangering the survival of other plants, but people and the government seem apathetic to the looming spectre.

We are preparing for the decennial census, the first in the new millennium in 2001 and we are already grimly aware that we will soon eclipse China to gain the dubious distinction as the most populous country in the world. On its 52nd Independence Day on August 15, 1999, India achieved the dubious distinction of joining the "Demographic Billionaire Club" along with China with its population crossing the one-billion milestone. Thus, it not on

economic front, on demographic front atleast, we have raced to deprive China of monopolising the Billionaire status. At the present rate of "demographic progress", we are poised to overtake even China as the most populous nation in the world in the next four decades, as per projections of United Nations Fund for Population Activities (UNFPA). Before the population juggernaut runs over us, we have to see to it that we do everything possible to slow it down. And this could be done only by the combined efforts of the government, the people, the NGOs and the corporate world. Educational institutions across the country could contribute their incremental effort to make the crusade reach the last post of victory.

Dispie allocation of huge funds (Rs. 3000 crore during 1998-99) for family planning, there is no significant fall in population growth. It is presently 1.6% in contrast to 0.9% for China. With a geographical area of just 2.4% of the world, we bear the burden of 16% of global population. The comparative figures for China are 7% of global area and 20% population; USA 7%/6% and Russia 12%/5%. Naturally with such a big burden on land, a "democratic" India (unlike a dictatorial China) cannot afford to take drastic coercive measures and consequently finds itself in a quagmire of poverty, dearth, disease, illiteracy and squalor with its national income constituting barely 2% of the total world income. Even among the SAARC countries, our per capita income (\$ 380) is much lower than even Maldives (\$ 1,032), Sri Lanka (\$ 740) and Pakistan (\$ 480). Of course, we can have the consolation of being ahead of such Least Developing Countries like Bangladesh (\$ 280), Nepal (\$ 210) and Bhutan (\$ 163). In the comity of nations, we are ranked at a woefully low rank—132nd as per World Bank's Human Development Index. All our advancement in nuclear field (Pokhran II), space exploration through satellites and the economic strides made through nine Five-Year Plans appear only cosmic in the context of backwardness scenario we are pushed to through population explosion which is nullifying all progress. In fact, the starvation deaths in Orissa and elsewhere, the growing numbers of ill-clad, shelterless under and malnourished populace—all indicate to the pointer that the long-discarded Malthusian forecast is going to prove true at least in our case; unless we take timely steps to control the burgeoning population. Short of draconian measures of forcible sterilisation, we should earmark more funds for education (especially female), health care and other social services. Public participation through NGOs and social organisations be sought to make the family planning

programme people-oriented rather than Government-oriented. The population clock should be shown ticking fast after every half an hour or Doordarshan to hammer home the dangers of galloping population. People violating two-child norm should be denied free medical care and even rations at public distribution outlets. On the other hand there should be conspicuous incentives (social and economic) for those who remain celibate throughout life, or stick to one-child norm or marry late—say after 45 years; thereby helping in checking population growth. Special Identity Cards should be issued to such persons entitling them to priority medical care, subsidised air and rail journey, subsidised interest rate for loans, priority allotment of Government accommodation and flats built by various Urban Development Authorities. LPG, car, accelerated promotions, cash awards, exemption from house tax, relief in income tax, etc. At the same time, we must restrict the facility of subsidised (50%) ration and cheaper kerosene only to such couples below poverty line who conform to the two-child norm, abstain from drinking and undertake to send their children to Government schools providing free tuition, books, mid-day meals. Those already having more than two children must go in for sterilisation to be eligible for the facility. Otherwise, the Subsidised Ration Facility introduced recently for those below poverty line, (approximating now 400 million), would only lead to multiplying numbers pulling the country to the nadir. In order to prevent democracy slipping into "mobocracy" as it is now, let future voters, say after 15th August 2000 having two children be only allowed to exercise their franchise and let people having more than one living wife (present and past) as also their offsprings be debarred from voting. But which party will bell the cat? All are after vote bank politics with vested interest in country's backwardness, poverty and population growth.

That India lives in different ages like the bullock cart age and the age of information, superhighway and communication satellites cannot be denied by anyone. This high contradiction could be at once a bane and a blessing. We have the largest army of child labour in the world and we have the best software professionals that could win the plaudits of the CEO of the Microsoft giant, Mr. Bill Gates. India presents the best and worst features of a system in a flux: regions that reek of high child morbidity, child mortality, high maternal mortality, lower literacy, child marriages, discrimination against the girl child, female infanticide, rampant evils like dowry, child and maternal malnutrition. And there are pockets where literacy, health standards, industrial and agricultural developments are far

above the national average. How we strike a balance between these imbalances will help us a long way in defusing the population bomb. For instance, States like Punjab, Haryana and Gujarat that have earned a name for themselves in industrial development could be models for the rest of India. Kerala that basks in the glory of social development including zero population growth, but has miserably failed to sustain agricultural and industrial growth has to learn a lot from their brothers and sisters in Punjab, Haryana and Gujarat. And BIMARU States like UP, MP, Bihar, Rajasthan have to dovetail the best from the models from both the north and south India.

It is worth trying a zone-wise approach to the population problem: we did it with resounding success in the case of our drive for total literacy. Many governments, with the backing of NGOs and community took up districtwise plans, and executed total literacy plans with spectacular success. Can't we take up similar plans in the case of population control? We can, if we are fired with the political will to transform our future that could go haywire if we let things go the way they choose to go.

7. Rally For The Valley

The Narmada Bachao Andolan will perhaps go down in history as the longest struggle ever waged by people to protect the eco-system. It also raises the fundamental question whether in the name of so-called development, the poor villagers and tribals can be forced to sacrifice their right to land, livelihood and decent living. Yet another sensitive revelation of the still smouldering embers of the agitation is the valuable hiatus between the empty promises and performance of the government in regard to reaching relief and rehabilitation to lakhs of the displaced when a development project is in the process of construction and completion. The Andolan has riveted worldwide attention not because lakhs of people are up in arms against the dam as such that is likely to benefit the farmers in Gujarat, Madhya Pradesh and Rajasthan, but because the powers-that-be have woefully failed to understand the miserable plight of the "refugees" of development. No amount of compensation can match the emotional attachment people have for the land of their birth with which they have nurtured their socio-psychological ties for centuries; but even this paltry compensation has been denied, all because the victims are the marginalised sections of society whose muffled voice has now become strident just because there are now such voices as those of the indefatigable Ms. Medha Patkar, the literary celebrity and Booker Prize winner

It is high time that the government, the media and a section of the NGOs galvanise into action to choose that model that suits the socio-economic conditions and cultural matrix of a particular state to make the small family norm leapfrog in order that our gains on other fronts are not frittered away. Any smugness on the part of all those concerned would spell disaster.

Uttar Pradesh continues to be the largest State, population wise with 16.44 per cent people of the country living there followed by Bihar with 10.21 per cent and Maharashtra with 9.33 per cent. West Bengal occupies the fourth place accommodating 8.04 per cent of the country's population, followed by Andhra Pradesh with 7.80 per cent.

Measures to control population cannot be taken in isolation; they have to take into account the plus and minus points of each region and the State and the distinctive socio-economic and cultural conditions of each State. In other words, India need to take up a holistic approach while coming to grips with a sensitive issue like population control. But we must act sooner and fast when we can manage population explosion rather than later when it becomes unmanageable. □

Ms. Arundhati Roy and hundreds of others who feel piqued by a development credo that takes land from one to give to another. What hurts these crusaders... is whether the marginalised dispossessed should continue to be exploited by those who design development paradigms that tend to widen the chasm between the better-off and worse-off.

It is on record that the Narmada Valley Project, when completed, will displace over two lakh people. How hollow the so-called assurances from the government turn out to be is evident from the shocking fact that at least 140 families in Gujarat, displaced over 12 years ago, have returned to their original villages in the submergence zone totally disenchanted by bleak milieu of resettlement. Worse still, the government of Madhya Pradesh had the gumption to confess that it does not have enough land to settle those displaced by the dam. The Narmada Dam debate is emblematic of the tragic fact of government's chronic apathy to the plight of all those still struggling for a berth in life consequent upon the construction of dams in the 50s and 60s and other showpieces of development. If the development projects did not proceed in tandem with short-term and long-term relief and rehabilitation, can the affected millions be blamed for carrying on a crusade against the lackadaisical stance of those who are supposed to be the

supreme guardians of the interests and welfare of the people ?

According to Ms. Arundhati Roy, who is now spearheading a campaign against the Narmada Dam alongwith Medha Patkar, the country has built about 3,300 dams in the last 50 years. Still there is no national rehabilitation policy for the displaced people and that there has not been any cost-benefit study or an evaluation of the impact of big dams. The dams have displaced 40 million people in the country so far. One of the major objectives of dams in general is to prevent floods and drought apart from the bonanza of hydro-power and irrigation that each dam provides. But floods still ravage many parts of the country despite several dams we have built.

The Sardar Sarovar Project has already cost Rs. 7,500 crore and planners say that it would require another Rs. 35,000 crore to complete.

Ms. Medha Patkar and the former Chief of the Naval Staff, Admiral T. Ramdas have requested the President of India to intervene to safeguard the interests of the oustees of the Sardar Sarovar Dam. Said the former Naval Chief: "It is a sad commentary on our priorities as a nation that while we have been united in our support to the brave jawans fighting on the barren slopes of Kargil, we are unwilling and unable to muster even a modicum of concern for other fighters who have also been waging a different kind of war, a just war, to conserve and preserve their lands, their homes, their way of life and the forests of this same Bharat Mata."

Comparisons could be odious, but the heightened passions aroused all over India from the last week of July 1999 over the "Rally for the Valley" led by Ms. Medha Patkar and Ms. Arundhati

Roy on the fall-out of the decision to raise the height of the dam from 85 metres to 90 metres remind one of exciting days in India before Gandhiji started his Dandi March or Salt Satyagraha. The nation has been witnessing the collision course of those living in the Narmada Valley whose lands will be submerged by the reservoir gliding up their loins to die for a cause, threatening to drown themselves in the Narmada if the authorities turn a blind eye to their plight and those who are keen on speeding up the construction of the dam. As the agitation gained momentum, a panicky Gujarat government refused Ms. Arundhati Roy permission to transit through Gujarat on her way to Jalsindhi, on the banks of the Narmada in Madhya Pradesh.

As the crisis loomed large, the Supreme Court began hearing on a writ petition filed by the Narmada Bachao Andolan that the dam spelt disaster to the lives and livelihood of the families living in the valley. The NBA placed material contending that the affidavits filed by the riparian States on the measures taken to rehabilitate the evacuees were fraudulent.

Says one of the staunch supporters of the NBA, the former judge of the Supreme Court, Justice V.R. Krishna Ayer: "I know that dams are necessary for increased production and generation of power. But against kulaks and tycoons, the lives of small people do matter in Gandhi's country and Buddha land."

NBA is a voice of the voiceless. Can we afford to deny human rights to villagers and tribals of India in the name of skewed ideas of development?

Meanwhile, Gujarat Government is hell-bent to proceed with the project which, according to it, is the only means to solve the water needs of the state.

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8. Taliban : A Destabilising Factor In Asian Politics

The Taliban that emerged as powerful force in the see-saw battle for supremacy in the war-scarred Afghanistan just a few years ago and that virtually controls more than eighty per cent of the land-locked territory has indeed become a threat to peace and stability in the Asian region. The meteoric rise of the Islamic fundamentalistic movement in Afghanistan— surreptitiously and openly nurtured by the obscurantist elements from Pakistan, Saudi Arabia and a few other countries— has been sending shock waves in India, the Central Asian Republics, Iran, China and even in

the distant USA. In a short span of time, the Taliban has earned notoriety as a magnet of international terrorism, giving sanctuary and a breeding ground to terrorist organisations around the world and terrorists like Osama Bin Laden. It has also boosted the illegal drug trade racket in opium cultivation and has muzzled basic human freedoms, especially the human rights of women. Repeated efforts by the UN body to put an end to the prolonged nightmare the people of Afghanistan have been going through, have only ended in disastrous failure.

The Kargil conflict and the recent weeklong Taliban offensive on Shomali and Panjshir region held by Northern Alliance of President Burhanuddin Rabbani in Afghanistan demonstrate the tentacles of the insidious extremist movement in the entire Asia. Which means the fluid politics and the tenuous peace and the on-going civil war in Afghanistan, egged on by Afghanistan's neighbours, will continue to be a source of disequilibrium in India. It is no longer a secret that several Afghan mujahideen groups like the Al Badr were actively involved in recent Kargil conflict.

As early as in November 1996 *The Independent* of London had revealed that the Taliban had reopened two camps near Khost on the Pak-Afghan border to train international terrorists and Pakistani mercenaries—Al Badr I for Pakistani recruits to foment trouble in the Kashmir Valley in collusion with Harkat-ul-Ansar, the Pakistan-based Islamic militant group and Al Badr II which accepts up to 160 foreign trainees, mostly Arab and Sudanese for fighting in Chechnya, Bosnia and now in Daghestan (Russia). Harkat-ul-Ansar (HUA), the notorious outfit believed to have liquidated the five Western hostages it had kidnapped in Kashmir Valley in 1995, sends all its recruits to the training camps in Khost province across the Pak-Afghan border. The HUA has been officially designated as a terrorist organisation and outlawed by the USA following its involvement in recent international terrorist activities. The terrorist camps in Khost also impart training in bomb making, the use of automatic weapons, rocket launchers and anti-aircraft weapons and in the nitty-gritty of *jihad*.

India's military attache in Afghanistan during the Soviet occupation of Afghanistan, Mr. Himmat Singh Mittal, had warned in an article published as early as 1 October 1996 that "the Indians would do well to take note of the developing threat (from Taliban) to Kashmir and Ladakh, by infiltration and other means from Wakhan region, in case one day, a Pakistan-friendly Taliban firms in Afghanistan." According to his expert on Afghanistan, even China is also not free from the looming spectre of Taliban on the Muslim-dominated Xinjiang province. The growth of Taliban has been viewed with dismay even across Herat in Iran. India, China and Iran apart, the Muslim-dominated states of Tajikistan, Kyrgyzstan, Uzbekistan and Turkmenistan in the CIS feel traumatised by the violent march of Taliban in Afghanistan.

The northern provinces of Konar, Takhal, Badakhshan, Kodus, Balkh and more, with their Uzbek and Tajik racial mix, are at loggerheads with the pre-eminent Pushtoon thrust of Taliban; the ominous Shia-Sunni divide can engulf the entire Asian region in the perpetual conflict.

In 1998, Communist Party officials in China had admitted of Muslim terrorists, trained by the Afghanistan fundamentalist Taliban movement, infiltrating China's Far West. It became evident that China now regards the threat of Islamic insurrection in the vast Xinjiang region, astride the ancient Silk Road, as more serious than the tremors in Tibet. Xinjiang is one of the outer reaches of the former empire which was only loosely attached to the Chinese heartland. The population consisted mainly of Turkic-non-Chinese-Uighurs and Kazakhs. During the Cultural Revolution of 1966-67, all mosques were closed and Muslims persecuted. Chinese citizens migrated to outnumber the local Muslims. China now admits that it is paying the price for those years, as militant Islam abroad influences young Uighurs. China has reportedly closed the Karakoram Pass to check entry of militant Islamic fundamentalists from Afghanistan and Pakistan into its Xinjiang province where not only the local Muslim populace was brainwashed to Islamic fundamentalism but also quite a big number was recruited to fight along with Taliban to oust the remnants of Rabbani rule in Northern Afghanistan. (Recently some such Chinese Muslim Mujahideens were captured by Northern Alliance). But alas! It is regrettable that China has failed to share the concern expressed by USA, Russia & India against international terrorism.

After sixty years under Communism, the Central Asian republics are looking askance at the Taliban and the bigotry they symbolise. A panicky Tajikistan has the most to dread from the Taliban and it has always laid the blame for its civil war on Taliban. Even Kyrgyzstan is feeling the heat of Taliban's onslaught. It has sought India's help in this regard.

Without Afghanistan, the oil and gas from Central Asia cannot flow to the South Asian markets. International oil consortia, one led by UNOCAL and another by Delta Oil of Saudi Arabia, have already expressed great concern in the ongoing conflict in Afghanistan. Pakistan and Saudi Arabia, therefore, provide all the wherewithal to the Taliban, the virtual protegee of Islamabad. According to UNOCAL estimates, "the oil route through Afghanistan, could, on Day One start pumping a million barrels of oil per day," says Richard Mackenzie in his book *The US and the Taliban*. This explains why USA did not view the Taliban as a destabilising element until Washington was caught napping when the international terrorists, operating from the sanctuary of Taliban, masterminded bomb attacks on two US embassies in Africa in 1998 killing over 200 people. Retaliation followed with USA targeting terrorist hideouts abroad, but the dreaded suspect Osama Bin Laden is still at large protected by Taliban and USA has yet to nab him. And Taliban plainly refuses

to hand over the Saudi-born terrorist to USA— notwithstanding the recent sanctions imposed by USA and even by United Nations (November 14) against Taliban regime for harbouring Osama Bin Laden.

USA has already decided to freeze the assets of the Ariana Airline of Afghanistan and block USA companies and individuals from doing business with the Taliban. The Taliban supreme Mullah Mohammad Omar has recently said that he would never leave Laden in the lurch. The Afghan economy is all but buried under the rubble of 20 years of war, but overflight fees are thought to give the Taliban one of their legitimate sources of income. Raw opium, the main ingredient of heroin, is the major Afghan export. Every aircraft overflying Afghanistan is obliged to pay the Taliban \$400 and Ariana has as many as 80 flights a day.

After the African bombings, the US Secretary of State, Ms. Madeleine Albright, has made it absolutely clear that USA was prepared to relent on the issue of recognition of Taliban if it stopped harbouring Bin Laden and abandoned its appalling treatment of women and use of medieval punishments. Taliban decree provides for harsh punishment like stoning to death those guilty of adultery. Women are barred from going to educational institutions and employment outside home.

Long on the linch-pin of the Golden Crescent—the opium-growing region that stretches through Iran, Afghanistan and Pakistan has assumed a dominant position in the volatile area. According to a report by the UN Narcotics Control Board, Afghanistan may have overtaken Myanmar as the world's leading producer of opium, with a 1998 yield of 2,200 tons, up 9 per cent from the previous year. (A little over 10 tons of opium is needed to produce one ton of heroin.) Two outside factors helped propel Afghanistan towards that dubious honour: poor weather, which damaged last year's crop and stricter enforcement in Pakistan, which reduced last year's opium output to a mere 25 tons, from nearly 600 tons two decades ago.

In the course of their nearly five-year-old fight to rule Afghanistan, the Taliban's leaders have cracked down, sometimes violently, on the people living in the two-thirds of the country that has come under their control. The Muslim clerics and their followers have punished harshly women in dress deemed immodest, men with clean-shaven chins, adulterers, thieves and sports players. But they have shown no such resolve with producers of raw material for intoxicants clearly forbidden in the *Quran*, Islam's holy book. More than 90 per cent of Afghanistan's poppy-growing areas are under Taliban control. The

country's biggest poppy-producing province, Helmand, borders Kandahar province to the east. Despite the Taliban's professed religious convictions, it has not acted with customary zeal to stop poppy cultivation. Its reluctance stems from the damage Afghanistan's economy has suffered during nearly 22 years of war, the revenue derived from a 10 per cent tax collected on opium and a fear of losing popular support from hundreds of thousands of small growers of poppy. Opium is Afghanistan's largest cash crop, and perhaps "the largest source of income." And the Taliban's unsavoury reputation continues to scare off potential international donors for Afghanistan's anti-narcotic efforts.

How did Taliban come to the centre stage of the mercurial Afghan politics? Ever since the mujahideen guerrillas defeated the Soviet-backed communist government and marched into Kabul in April 1992, they have battled viciously among themselves for control of the capital. The civil war has killed more than 20,000 civilians and wounded more than 100,000 others, and flattened much of Kabul. Whole districts, residential and commercial, are deserted and reduced to rubble.

The Taliban movement, originally initiated in a sleepy village in Kandahar's Maiwand district, by Mullah Mohammad Omar, a 47-year old former mujahid who lost an eye in the anti-Soviet War, counted only 30 adherents at the outset. They were united in their anger over the lawlessness into which mujahideen rule had sunk. Particularly galling were the daily abuses at highway checkpoints, where extortion, robbery and rape were the norm. Their first guns came from a local mujahideen commander and their first recruits were drawn from the madrasas. Soon the Taliban became a swollen river with its ranks filled from schools across the Pakistan border, where tens of thousands of Afghan refugees were studying. Most of these colleges were run by the Jamiat-e-Ulema Islami, a traditionalist Sunni party that is influential in Pakistan's ethnic Pushtun belt of Northwest Frontier Province and northern Baluchistan.

To look for a change in the style of functioning of the Taliban is asking for the moon. The Taliban, fully bolstered up by Pakistan and Saudi Arabia, stands for the most retrogressive trend not only in the socio-economic aspects of Afghan society but also for the still more chaotic scene in Afghan politics. For the people of Afghanistan life would be as hard as ever; only their persecutors have changed and the women have been the worst victims under a regime that still clings on to archaic personal laws to keep their people under the most heinous social thralldom. It is no longer an ethnic conflict, but a fratricidal war that would just drag on

just because Afghanistan has neighbours who look far beyond to tap the oil reserves in the Central Asian Republics. Perhaps USA would have recognised the Taliban, had not the Bin Laden factor supervened. Pakistan would pool its entire resources to lend greater momentum to the Taliban to hold the banner as the godfather of Islamic fundamentalism worldwide and create disturbances in the valley of fear that Kashmir has become.

India which has suffered most from Islamic terrorism has rightly taken up the issue in the ongoing Security Council. In an apparent endorsement of India's stand, the Council has condemned Pak support to Taliban militia by reinforcing them with arms and trained personnel to commit inhuman crimes. During the course of discussions, the UN Under-Secretary for Political Affairs, Mr. Kieran Prendergast, disclosed that an estimated 2000 to 5000 young students from *madrasas* in Pakistan had joined the Taliban. While Russia called for punitive sanctions against Taliban, China favoured an arms embargo. It is high time that a strong international action is taken against the rising Islamic fundamentalism symbolised by Taliban, which, if not checked in time, is likely to emerge as the top security threat over the next decade for countries

as diverse as India, Russia, USA and China. Even Saudi Arabia, which is alleged to be a big source of funding for these militants, as also Pakistan, the great abettor, could be at the receiving end.

The UN has already expressed its unhappiness over the continuing bloodletting in Afghanistan, blaming the neighbours in Asia for sabotaging all the efforts at a peaceful settlement of the civil war. For India, the developments in Afghanistan and the growth of Taliban will continue to be a source of worry for years to come. So too will be the stability of the countries threatened by fundamentalism nurtured in the crucibles of Kabul, Kandahar and Herat. The UN Security Council has justly imposed economic sanctions against Taliban which include freezing of all Taliban's assets overseas and ban on flights to and from Afghanistan (Afghanistan's Ariana airlines would then be confined to flying within the country constituting a very big economic hit to Taliban) because of their failure to expel Bin Laden by November 14, 1999. Indeed Bin has become a political potato too hot to be held and too valuable to throw away for Taliban who at one stage were reportedly negotiating a "compromise" with USA on this issue but have since resolved not to leave Osama in the lurch. □

9. Kargil Victory

The snake has been scotched, but not killed. The great threat from across the LoC has now receded for a while and none knows for sure when the poisonous snake will strike us again. That eternal vigilance is the price of liberty is no longer a cliché, and we have learnt it at great cost; even as the ink used to sign the Lahore Declaration had not gone dry, the snake, spewing lethal venom, was slithering down the rugged border and climbed on to the dizzy heights in Kargil on Indian side of the LoC, threatening the lives of our soldiers.

Now under extreme pressure from the rest of the world and recoiling under the artillery fire and the bombardment of the IAF, the Pakistani forces and the so-called Mujahideen are back to the lairs from which they had sneaked out into the sacred Indian soil. But these humiliated and injured hordes have retreated only to strike us again at a time when they feel India has lowered its vigil. India can hardly trust her neighbour who has been notorious in treading underfoot the sanctity of all pacts and all the goodwill that could be nurtured only by mutual understanding and trust. If we haven't learnt that our neighbour is only interested in letting the "Tashkent" spirit of 1965, the spirit of the Shimla Agreement of 1972 and the

Lahore Declaration of 1999 evaporate, we would be in for a still bigger shock than Kargil.

Bilateral talks are only a camouflage to carry on Pakistan's sinister designs by other means. Let us not gloat over our military and diplomatic victory over Pakistan since the retreat of the enemy is more tactical than actuated by any desire for *entente* or durable peace with India. Pakistan's relations with India and its propaganda against India on Kashmir and other issues are built on a tissue of lies and to hope for a change in Pakistan's mindset towards India is asking for the moon. Even as the Directors-General of Military Operations of Indian and Pakistani Armies met at Attan on the Indian side of the international border in Punjab on July 11, 1999, the Pakistani Foreign Minister, Mr. Sartaj Aziz and the military spokesman of Pakistan Brigadier Rashid Qureshi were unashamedly at the familiar game of fooling the world. Here are excerpts from the fabricated stories. As we have been saying time and again, the Mujahideen are people from Indian-occupied Kashmir. They are people of the land when you talk of withdrawal of Mujahideen since the area that they come from is Kashmir Valley or the Srinagar Valley where do

you expect them to withdraw. Towards Srinagar Valley ?

Pakistan's undeclared war in Kargil may be over for the time being and now that it has failed in its objective to gain more territory through incursions what it could not get through tirades and diatribes against India at international fora, it may hatch more plots and plans for the future. India must learn from the bitter experiences of 1947, 1965, 1971 and 1999 that there is no meaning in citing scriptures to Satan and we must learn to act tough and gear ourselves to speak in the language that our aggressor understands. Any kind of appeasement towards Pakistan amounts to betraying the brave jawans who sacrificed their all so that this nation shall live up to its dignity and honour.

Kashmir or, no Kashmir, Pakistan will find a thousand alibis to fight India. Have we forgotten what Mr. Zulfikar Ali Bhutto said several years ago : "We Pakistanis will eat grass, but wage a thousand year war against India". Now, as of then, Pakistan wouldn't mind ruining its economy if it thinks it can humiliate India. Let us make no mistakes about it; when it comes to India-baiting or sabre-rattling, the civil authority in Islamabad sees eye to eye with the Army and ISI.

Pakistan's insidious role in the recruitment, training and financing of mercenaries across the LoC and the international border has been condemned by India for over a decade, but with Kargil, the world has taken note of it. Perhaps, Pakistan's friends like USA and UK might have been aware of the transborder terrorism over the last one decade, but it is only now that they have acknowledged it. Had Nawaz Sharif been like of Saddam Hussein or Slobodan Milosevic, USA and Britain would have joined the fray with their cruise missiles and Tomahawks; but with Pakistan as their old ally, they could just 'persuade' her to behave. India was patted on the back just because it was hesitant to cross the LoC which India could have done to cut off the supply lines of the enemy.

The flotsam and jetsam of the leftover of the civil war in Afghanistan with a government backed by the former Soviet Union and the other side backed by USA and CIA came handy for Pakistan not only to foster the genie called the Taliban, but also use shreds of it, along with other militant outfits, trained by the Pakistan Army, against India. These marauders-cum-mercenaries from the undulating terrain in Afghanistan had inherited a surfeit of not light but sophisticated weapons originally supplied by USA and these were used against India in the Kashmir war theatre.

The hordes that crossed the LoC belonging to such groups as Lashkar-e-Toiba and the Harkat-e-Jahad-e-Islami, with their bases in both Pakistan and Afghanistan seek not only to liberate Jammu and Kashmir, but establish the supremacy of Islam world over.

In fact, one of the major objectives of the Kargil offensive by Pakistan was to split Ladakh from the rest of Jammu and Kashmir. Pakistan had made grandiose plans to cut Leh's supply lines from the Kashmir Valley through the choke point of the Zojila Pass, the Valley's gateway to Ladakh. The strategic occupation of the mountains near Drass, which is on the doorstep of Zojila, has to be seen from this viewpoint.

Pakistan began its transborder terrorism originally with the support of the JKLF (the Jammu and Kashmir Liberation Front) and the Hurriyat Conference. In due course, once Pakistan secured a foothold in the Valley, it jettisoned the JKLF and started courting organisations like the Hizbut Mujahideen, the militant wing of Jamaat-e-Islami that stands for Kashmir's merger with Pakistan. To whip up religious fervour, the Pakistani-backed militants occupied the shrines of Hazratbal and Charar-e-Sharif. The slow and steady disenchantment of Kashmiri people with the militant outfits who served more as conduits of Pakistan's pan-Islamic designs than as those interested in the welfare of the local people helped the government conduct both the assembly and parliamentary elections in 1996 and 1998.

A disillusioned Pakistan started inducting into the Valley far better trained and motivated Islamic mercenaries, mainly Afghanis, to stoke the dying embers of insurgency in Kashmir. It even brazenly betrayed the much-publicised "Lahore Declaration" signed by its Prime Minister Mr. Nawaz Sharif with his Indian counterpart, Mr. Atal Behari Vajpayee for peaceful resolution of all outstanding issues through bilateral talks barely nine months back on February 21, 1999. Thus when the people of Pakistan and, in particular of India, were nurturing the hope to live peacefully in the wake of Lahore "peace process", after 52 years of conflict, Islamabad chose the Kargil sector in J & K to shatter that dream. The Pakistanis moved in surreptitiously to occupy "temporarily-vacated" Indian bunkers on strategic heights on Indian side of LoC and fortified them with arms, ammunition and provisions to last them for several months at a time when the Indian army had customarily retreated to the lower reaches during harsh winter. It is these bloody hordes that carried out carnages in Doda and other areas in

the State. We have seen that while the Kargil War was on, the militants were mowing down innocents elsewhere (in Poonch) in the State.

It is quite likely that these mercenaries must have played a heinous role in the inhuman torture, mutilation and disfigurement of Indian soldiers and Prisoners of War. Pakistan Army regulars must have abetted in this heinous crime against humanity violating the Geneva Convention of 1949. (In sharp contrast, India has recently returned 8 Pakistani POWs belonging to Pakistan's regular army; all in one piece.)

There would be hardly anyone in this country who will be carried away by hollow concern expressed by the Pakistan Prime Minister in his nationally televised address on July 12, 1999. "I tell Prime Minister Vajpayee, come let's talk. Come let's take our people away from the path of war ... come let's sit across and find paths to a better future. We have wasted too much time already, let's not delay things further." The same day a Pakistani military spokesman confessed that Kargil was a "small episode" and more such incidents could take place.

Let this country take note of it. The man at the helm of affairs who signed the Lahore Declaration just a few months ago and who was the first to destroy the letter and spirit of the Declaration wants to give a new life to the Declaration. At the other end, Pakistan's military spokesman confesses that Kargil is only a beginning. The truth of the matter lies in what *Time*, the leading American magazine revealed in one of its July issues. It said that disguised as Mujahideen, the Pakistani army started moving up the mountains in November to occupy Indian bunkers. The first batch of troopers grew beards, dressed in *salwar-kameez* and moved up without any weapons. They dug bunkers, took their positions, waited for their supplies and in May began the Kargil conflict. The magazine said that "the presence of Pakistani soldiers deep in enemy territory disproves Islamabad's claims of innocence."

According to *Time*, "As far back as November 1998, the first batch of Pakistani troops from Northern Light Infantry regiment and Khyber Rifles—military units experienced in mountain warfare—crept over the 3,500 metre high passes along the LoC to occupy the high ridges held in the summer by the Indian Army. Their task was to build new bunkers on the ridges, but as far as possible from the empty Indian positions that would be unsafe because those are marked on the Indian maps. Pakistan was stretching the LoC to its advantage."

The most beneficial fallout of the Kargil War has been that in future even Pakistan's allies would buy the Pakistani story on Kashmir with a pinch of salt. Will India be ready to cash in on the diplomatic winds of change and mount a better public relations assault when she has a good case. All along we have gone on default and Pakistan has manoeuvred to present a stronger case even though her case was weaker than ours. It would pay us if our authorities concerned made an effort at researching the documents in our archives when we built a strong case at the UN. We were on the defensive at first, climbing up the offensive, then descending to the defensive.

This is not all. We need a Kashmir Policy based on the facts of more than half a decade, a policy that would tackle the proxy war and the persistent insurgency and the recrudescence of future Kargils. Let us not act on fits and starts allowing the enemy to catch us unguarded. We may have to learn from countries like Israel, China and USA, and build up a policy based on hindsight and foresight. Let's build a consensus by building a brains-trust drawn from talents from the policy makers in the Ministries of Defence, External Affairs and Home, besides experts from the Institute of Defence Studies, National Security Council, former Secretaries of Defence, External Affairs and Home and those who handled Kashmir Affairs in one capacity or another. Let us act now and fast lest we should be caught napping again. What is required is a national consensus that covers all aspects including the nuclearisation of the subcontinent. Delay on the formulation of a national policy and half-hearted measures will spell disaster for India. Kargil is just a semicolon; let us bring the story to a full stop.

Merely recognition of LoC as international border (which is a replica of one of India's pre-conditions to resume talks with Pakistan after Kargil conflict to seek affirmation of the inviolability and sanctity of LoC) will not suffice unless Pakistan sincerely and honestly agrees to stop cross-border terrorism to "create more Kargils" under a guarantee from USA, USSR, China, South Arabia and OIC, to a UN-backed resolution legitimising LoC as international border.

Meanwhile, taking advantage of the vacuum created by diversion of 2-3 divisions of military personnel from Counter Insurgency Gnd in J&K (established over the last 10 years) to man the 140-km Kargil border, Pakistan has resumed proxy war through intensified insurgency activities targeting especially Indian military and para-military

posts in J&K and opening new conflict areas on Jammu border. The recent attacks on the Badamt Bagh Cantonment in Srinagar is latest such attempt. Its sole aim is to invite American or Western intervention to internationalise the Kashmir issue to its advantage. In such a scenario. The deposed Pak PM's repeated calls for resumption of dialogue were only an eye-wash to hoodwink

the world opinion once more. So does the offer of new military Chief Executive, General Pervez Musharraf, for resumption of talks and withdrawal of forces from international borders, surreptitiously excluding LoC, where indeed he would like to settle score with India for his military mis-adventure. Increased vigilance should be our watch word in this changed scenario. □

10. India Becomes A Nuclear Power

Few would have dreamt in their wildest dreams before the fatelut May 11 and May 13, 1998 that the frundling elephant that India had all along been compared to in the Western media would and could metamorphose overnight into a ferocious lion that could not only roar but charge and kill anyone daring to cast an evil eye. Few could have foretold that the five underground nuclear tests at the Pokhran range in Rajasthan in May 1998, catapulting this nation of 950 million people overnight into a superpower on its own, would send shock waves across Beijing, Islamabad, Washington, the European capitals and even Tokyo.

The Buddha smiled once way back in 1974 and he smiled five times on May 11, 1998 on the Buddha Poomima Day and May 13 when India's Prime Minister, Mr. Atal Behari Vajpayee proudly nounced to the nation and the rest of the world out India venturing into the exclusive club of nuclear weapon states as part of the national security shield even as he congratulated the top scientists of India over their great achievement.

India is a country wedded to peace and non-violence and her great sons like Lord Buddha, Ashoka and Gandhiji had been living examples to prove this gospel. But India as a self-respecting nation would not propagate the peace of the graveyard or the non-violence of the weak; it is a pity that our non-violence has been mistaken by many as our weakness and many assume that India is a nation of weak-willed people. Time and again our leaders have reminded the world community that India has an inalienable right to defend its freedom, sovereignty and its ancient heritage and that it would take appropriate measures at the appropriate time to make its defensive preparedness as strong as it could. No nation need be apologetic, if it tries its best

to defend its freedom. And a nation like India that has suffered centuries of foreign subjection has every right—more than any other nation—to strengthen its defence. Moreover, India cannot take any chances when it lives in a hostile nuclear environment, with Pakistan receiving all sorts of smuggled nuclear and missile material from North Korea, China and other sources, and China itself having conducted several nuclear tests and armed herself to teeth.

In times of crisis India has to fall back upon its resources to defend itself, its hard-own freedom, its economic gains and its own ancient cultural legacy. It has had three wars with Pakistan and another disastrous war with China and both the countries are still in illegal occupation of Indian territory. India hopes that the smiling Buddha on May 11, 1998 would have conveyed the right message to the right quarters that evil designs on this country would not be tolerated. It was this logic too that prevented India from signing both NPT and CTBT—treaties that are discriminatory in nature. When the BJP government came to power, they had announced that India would go nuclear. The decision of the Vajpayee government to go nuclear does not emanate from any kind of jingoism or sabre-rattling mentality; it arises from the supreme concern to preserve the integrity of a nation described by many of its detractors as a 'functioning anarchy'. Far from it, India has conveyed to the rest of the world that it has the best brains that can excel the best in the world. The more they twist India's arm, the stronger it becomes. We have shown it when we developed the cryogenic engine, the series of modern missiles, the supercomputer, 'Param' and now the three underground tests in one go.

It is William Shakespeare who said that "the smallest worm will turn being trodden on," and India

is no worm'; it is a sleeping lion or, nay, a lion that feigns sleep and could charge on whoever is lying in wait to strike at her. Patience has its limits. On May 11, 1998 India proclaimed to the world: "Beware the fury of a patient man."

Be it the cold war or the post-cold war era, we have learnt the hard way that only strength recognises strength; only the strong respect the strong. A militarily weak nation will not only be a butt of ridicule, but the victim of bullying nations. The Pokhran test has earned India the self-esteem it richly deserves as a nation of 950 million people.

Even as reaction abroad to India going nuclear having become hostile, as was to be expected, the entire nation has rallied behind the government in its glorious hour of national pride. A militarily strong nation alone can build its economic and social infrastructure with single-pointed attention.

Meanwhile leading defence experts point out that the proliferation of nuclear weapons in the Asian region has left India with little option but to demonstrate its capability to preserve its basic security interests. Both Indian political leadership and the defence experts are aware that the West, Pakistan and even the UN might bludgeon India with verbal fusillade, but when it is a question of national security, no country can afford to remain complacent. The very fact that Pokhran has provided us a deterrent is in itself a psychological, political and military gain.

Over the years India has become wiser: the West, more particularly, the USA, inured to double standards and double-dealings, has always been seen as a power rewarding the wrong-doers and penalising those who were on the righteous path. USA never took any punitive action against China for supply of all prohibited war material because of considerations of *realpolitik* while it took the unabashed step of revoking the Pressler Amendment to resume arms aid to Pakistan. A former Director of the Indian Institute of Defence Studies and Analysis, Mr. K. Subrahmanyam says: "India was finally compelled to join the nuclear club because the international community legitimises nuclear weapons when they individually extended the nuclear non-proliferation treaty."

Now that India has set up a National Security Council, the Government would soon hopefully come up with a well thought out defence strategy that would cover the entire spectrum of defence preparedness, including nuclear deterrence, leaving behind the uncertain years when defence of the country was based on fits and starts and reaction to events as they occurred. The Nuclear Deterrence Doctrine enunciated by Government should be vigorously adhered to whatever be US pressure for signing CTBT (It has already lost much of its steam because of US Senate's rejection of signing of CTBT by USA itself). □

11. Missiles : No Compromise With India's Security

At the Wallops Flight Facility at Wallops Island East Coast, Virginia, USA, the base for NASA's and rocketing programme, a visitor from India spotted a painting displayed prominently in the reception lobby, depicting a battle scene with a few rockets flying in the background. The visitor's curiosity was kindled when he saw that the soldiers launching the rocket were not white-skinned, but dark with racial features distinctly Indian. It soon came out that Tipu Sultan's army was fighting the British with rockets. When the ruler of Mysore was killed in the battle of Turukhanahally in 1799, the British seized more than 700 rockets and 27 brigades, called Kushoons, and each brigade had a company of rocket men, called Jourks. These rockets were taken to England by one William Congreve.

History has turned full circle two centuries later in the land of Tipu as it has been the privilege of the Indian visitor to the Wallops Flight Facility in the early 60s to earn later the illustrious name of the Missile Man of India. The eighteenth century dream of Tipu saw its fruition on April 11, 1999 when Indian under the guidance of Dr. APJ Abdul Kalam, Scientific Advisor to the Defence Minister, test-fired the Agni II intermediate range ballistic missile (IRBM) with a range of 2,200 km from the inner Wheel Island, 16 km from Balasore in Orissa.

A span of 200 years and what a change that has come over the sub-continent. The British left India bag and baggage, but they left an India struggling to stand on its own. When India chose to trust her neighbours, near and far, with a simplicity born out of the Buddha and Gandhi legacy, we were betrayed by our own neighbour,

China, that virtually occupied large chunks of Indian territory overnight. In 1962 we learnt a lesson of life. Only the strong admire the strong, and we should know how to safeguard our home, our culture, social life and economic wealth.

Thus began the search for means to defend ourselves in consonance with what Lord Krishna taught Arjuna in the battlefield of Kurukshetra and with what Gandhiji taught us of the right to self-defence in the case of attack.

And we learnt more that self-reliance was preferable to banging on the doors of aliens for help for our survival. India launched on the Integrated Guided Missile Development Programme (IGMDP) in the early 80s—on 27th July, 1983, to be exact, and the programme has been totally Indian and indigenous—built on the wisdom and research of our scientists, engineers and brains from our research and scientific centres, universities and IITs. The West, more particularly, USA, abhorred the idea of any developing country, more particularly India, becoming self-reliant in any field, let alone defence. But India, with its inalienable right to defend itself or prevent wars forced on her, persisted in her efforts to evolve a sound defence system. And here was Dr. APJ Abdul Kalam, with his long stint of devoted work in rocketry, satellite launch vehicles with such veterans as the late Vikram Sarabhai, drafted by the Government to build a missile system for the country—with such familiar names as *Prithvi*, *Trishul*, *Akash*, *Nag*, *Agni-I* and now, *Agni-II*. Missile technology is considered the domain of a select few who grudge the rise to stardom of any newcomer. But a big country like India could hardly take things for granted, especially in matters of security. And team work under far-sighted leadership produced excellent results. The programme had partners in design, development and production from 12 academic institutions and 30 laboratories from DRDO, CSIR, ISRO and industry. In fact, more than 50 professors and 100 research scholars slugged on the missile development programme in their respective spheres of work.

The first launch of the missile programme conducted on September 16th, 1985, when *Trishul* took off from the test range at Sriharikota (SH). Our *Agni-I* was test-fired thrice in May 1989, test-fired again in May 1992 and February 1994.

And it was left to the redoubtable Atal B. Vajpayee to break the 5-year restraint put on the West and launch *Agni-II*, the extended range version, on April 11, 1999. The significance of *Agni-II* test lies in its connection with Pokhran II. Pokhran II gave India the capability to design kinds of atomic weapons and warheads. It did address the question of delivering them. India had a missile—the preferred means of nuclear delivery—that could take warheads to a range beyond 2,000 km. *Agni-II* has filled in the gap. *Agni-II*, unlike its predecessor, which had both liquid and solid fuel, is propelled by solid fuel in all stages. This is bound to boost our defence system's mobility and response time. In nuclear diplomacy it does put India in a much stronger position.

There are reports India is developing a longer range version of the IRBM *Agni-III* with 3,500 km range, capable of reaching targets deep in China. The reports say together with *Agni-II*, *Prithvi*, *Akash* and *Trishul* and the proposed *Agni-III*, India will be able to develop a minimum nuclear deterrent (MND). It is said that along with *Agni-II* missiles, India is also on the threshold of developing a submarine-launched ballistic missile, *Dhanush*, which would be later deployed on surface ships.

What is the characteristic feature that has made India's missile programme unique? On top of it, it has shown that India can compete with the rest of the world in any field and come on the top. Advancement has only helped India tap its hidden talent: it has been amply proved in both India's missile technology and space research. We can all be proud of our scientists and research students, of the different institutes and institutions who have pushed to the limit that India can, if only they got the guidance and inspiration from the select few leaders with lofty ideals.

12. India's Space Programme

India can be really proud of the elite band of India's space scientists who refuse to give up hope whatever be the daunting challenges or setbacks they face. When their own experiments fail, it only spurs them on for trial after trial till they wrest victory from adversity. When countries like US refuse to transfer technology or prevent even our friendly countries from transferring their technology to this country, Indian scientists refuse to turn pessimistic,

hurdles only reinforce their resolve to bank on their own genius and innovativeness to attain what was a few years ago dismissed as beyond their reach.

Indian space scientists once again give testimony to the axiom that 'nothing is impossible if one combines dedication, will power and perseverance', when they opened yet another chapter in the space saga on September 29, 1997.

when the Indigenous PSLV-C1 rocket hurtled the 2,200-kg Indian Remote Sensing Satellite IRS 1-D into its sun-synchronous orbit. As the 44.4-metre tall, 294-tonne Polar Satellite Launch Vehicle soared into the sky from Sriharikota, carrying a satellite nearly 300 kg heavier than the previous IRS-1C, it made every Indian swell with pride as there could be no better gift from our scientists on the golden jubilee of Indian Independence.

What was originally hailed as a textbook precision launch was later discovered to be a bit faulty when it came to be known that the IRS-1D launched by PSLV did not reach the correct orbit due to a mishap in the fourth stage of the launch. ISRO sources said that the 'apogee' (farthest point from the earth) of the satellite was nearly alright at 817 km and efforts were on to lift the 'perigee' (nearest point) of the satellite to 700 km from the 300 km. Our scientists did not lose hope and persisted in their efforts to correct the orbit and within a matter of days on October 7, 1997, they succeeded in placing the satellite in a functional orbit from where the on-board cameras could take imageries of the earth.

With the launch of IRS-1D, Indian Space Department has become a force to reckon with in the fiercely competitive billion-dollar global satellite launch market. Besides saving the millions of dollars spent on the launch of Indian remote sensing satellites by other countries, India can now reap foreign exchange by launching low earth orbit spacecraft weighing 400-500 kg, for other countries. All along, many of our satellites used to be launched from either Kourou in French Guyana or Baikonour cosmodrome in CIS (Commonwealth of Independent States). India has already signed an agreement with South Korea to launch a 110-kg satellite by the next PSLV; the South Korean satellite will ride piggyback on PSLV that will place another remote sensing satellite, IRS P4, in orbit next year. Meanwhile, India is hoping to secure more customers for the IRS data that is already being marketed to Eosat Corporation of the US under a billion dollar contract. Potential new customers for IRS data include Japan, Australia and South Africa.

IRS-1D, has enhanced capabilities in terms of spatial resolution, additional spectral bands, stereoscopic imaging and wide field coverage. The satellite also carries a tape recorder on board for recording data even when the satellite is not visible to any of the ground stations. IRS-1D also holds tremendous promise in defence logistics; its imagery can be used for strategic purposes such as monitoring of military movements. It has three panchromatic cameras which provide a total

coverage of 70 km on the ground. In addition it has wide field sensor, operating in the visible and infra-red region, with a spatial resolution of 188 metre and a wide swath of 810 km. The real strategic benefit is from the panchromatic camera, with a resolution of 5.8 m, giving Digital Elevation Models (DEM) and better contour mapping, essential for artillery targeting systems and low-level contour flying.

An independent dual-purpose (civil-military) satellite, say experts, will give India a cutting edge in the intelligence-based warfare (IBW)—actually a battle of wits and knowledge requiring sophisticated reconnaissance and surveillance capability. Modern warfare demands a networking of information, gathered with the help of satellites, between field commanders in a theatre of war. It may be recalled that during the Gulf War in 1991 US jets, guided by on-time data collected by satellites, could carry out precision attacks on Iraqi targets.

While the future of our space programmes looks rosy, there is little room for complacency. We are often dogged by setbacks, triggered either by human inadequacies or circumstances beyond our control. One of the greatest reverses recently has been the mishap that has overtaken our most advanced communication satellite INSAT-2D which was declared "inoperable" by the Department of Space on October 5, 1997. The satellite has been rendered crippled by 'short-circuited electrical problems'. As a consequence of INSAT-2D failure, at least 83 telephone exchanges, mostly in the north and north-east of the country, have lost terrestrial links with the transponders on board INSAT-2D. Efforts made by the Master Control Facility at Hassan to revive the satellite have proved abortive. INSAT-2D is the second satellite in the INSAT series to sutter. The INSAT-1C launched in July 1988 had to be abandoned due to a similar power problem in November 1989.

Meanwhile the successful blast-off of PSLV-C1, country's first indigenous polar satellite launch vehicle from Sriharikota Range (SHAR) on September 29, 1997, launching the 1200 kg IRS-1D has placed the country in the exclusive club of 4 nations (USA, Russia, France & Israel) capable of launching 1000 kg class of satellites and has ended ISRO's dependence on Russian and French Ariane Vehicles to launch IRS satellites.

Meanwhile, ISRO successfully launched, under a commercial arrangement with German Space Agency, a Rohini sounding rocket from SHAR on April 28, 1998 carrying a set of instruments from Germany to study the upper atmosphere. In 1999 India crossed an important milestone in space

technology with a successful triple satellite launch including 2 foreign—one German Tubsat and the other South Korean Kilsat besides the Indigenous Ocean Remote Sensing-IRS P4 on board PSLV-C2 on May 26, 1999 from Sriharikota: thus proclaiming to the world its capabilities to provide launch services to foreign satellites commercially. In the process, ISRO netted \$1 million recovering almost the entire cost (Rs. 48 crore) of its IRS-P4 (Oceanstat) dedicated to ocean studies.

ISRO also plans to launch INSAT-3B and GSLV towards the end of 1999; the latter launch would mark the completion of India's bid to become fully self-reliant in its ambitious space programme.

India's achievements in space technology and research show that our scientists and engineers are equal to those in advanced countries and whenever a challenge is thrown to them, they are prepared to accept it and come with their best for the nations.

13. Economic Survey : 1998-99

The Economic Survey for 1998-99, tabled in Parliament on February 25, 1999, calls for preparations for a "second generation" of economic reforms, stresses the need for constitutional limits on the fiscal deficit, and the need for downsizing and re-engineering the Government. Like all previous governments, the BJP-led coalition government too has shown its ingenuity in portraying its achievements through the Survey by claiming that 1998-99 has been a year of "recovery". Using the new national income series with the changed base year of 1993-94, it projects an overall economic growth of 5.8% this year against a modest growth of 5% last year. The new series estimate of Gross Domestic Product (GDP) is about 9% higher than it would have been in the old series. Beyond that, the picture is grim, especially with regard to government finances.

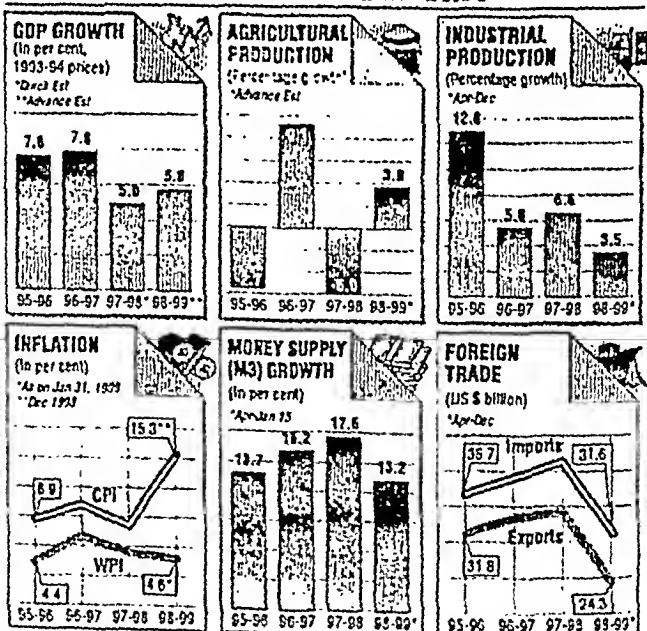
"The most intractable and long-standing issue confronting us," says that Survey, "is that of fiscal prudence," admitting that the Centre's finances during the year have remained under stress. It fears a repeat of last year's fiscal slippage. "It is unlikely that the year-

end fiscal deficit would be contained within the budgeted amount." The Survey concedes that the position at present is not significantly better than in 1991-92 when India faced an unprecedented external payments crisis.

Need For Fiscal Consolidation

The Economic Survey projects a higher than expected GDP growth of 5.8% (conceding that the

STATE OF THE INDIAN ECONOMY



Source: Economic Survey, 1999-99

KBK Infographics

new 1993-94 based GDP series is slightly inflated compared to the old 1980-81 series), and a decline in the budgeted fiscal deficit from 5.6% of GDP to 5.1% for the same reason. However, with expenditure rising by 26% in April-December 1998, compared to a 4.7% rise in revenues largely due to shortfall in indirect tax collections, the budgeted fiscal deficit is likely to be exceeded, according to the Survey.

It has projected a 3.9% growth in agriculture, 4.7% growth in industry, and a slight improvement in the current account deficit to 1.4% of GDP.

The next round of reforms, according to the Survey, will have to involve reform of "factor" markets (for capital, land and labour), the public sector, government and other public institutions, legal systems, state-level policies, infra-structure, agriculture, education and R&D, the Survey says.

Fiscal consolidation is "absolutely necessary" for containing inflation, reducing interest rates, promoting investment and growth, fostering ability in the financial system and balance of payments, and ensuring the "overall credibility" of the Government's macroeconomic policy. The survey notes that a high fiscal deficit fuels inflation, puts pressure on the exchange rate, keeps interest rates high, and investment and growth low. If financed by government borrowing, it also pre-empts funds which could otherwise have been used productively in economic activity.

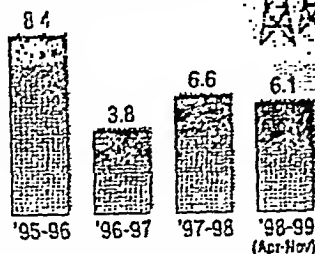
The highlights of the Economic Survey for 1998-99 are:

- Fiscal deficit is estimated at 5.1% in 1998-99 compared with 5.5% in 1997-98; current account deficit, which widened to 1.6% of GDP in 1997-98, is estimated to fall to 1.4% of the GDP in 1998-99.

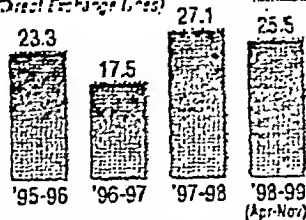
INFRASTRUCTURE

Per cent growth over previous year

Electricity Generated



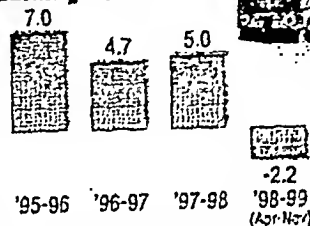
Telephone Connections (Direct Exchange Lines)



Cargo Handled at Major Ports



Railway Revenue Earning Goods Traffic



Source: Economic Survey 1998-99

KBX Infographics

- Total foreign exchange reserves (including gold and SDRs) at the end of January 1999 amounted to \$30.4 billion.

- Foodgrain production projected at 195.3 million tonnes in 1998-99 against the previous year's output of 192.4 million tonnes.

- The year-on-year monetary (M3) growth at 19.8%, as of January 15, 1999, exceeded the corresponding growth in 1997-98 by 2.9 percentage points.

- India's stock of external debt at September-end 1998 stood at \$95.2 billion against \$93.9 billion at end-March 1998.

- The annual rate of inflation rose during 1998-99 to a peak of 8.8 per cent on September 26. It decelerated thereafter to reach 4.6 per cent (provisional) on January 30, 1999.

- Sanctions and disbursements by all-India financial institutions continued their strong growth in 1998-99. During April-December 1998 sanctions grew by 36.9% and disbursements grew by 12.5%.

- Total imports, on BoP basis, increased by only 4.4% to \$51 billion in 1997-98 compared to 12.1% growth in 1996-97.

14. Union Budget 1999-2000

The bold budget of 1999-2000 presented by Mr. Yashwant Sinha sought to boost the confidence of the investor, resuscitate the capital market and bolster up Indian agriculture, rural economy and the infrastructure sector.

Unnerved by the looming spectre of the currency crisis that originated in South-East Asia and which later spread across to Brazil and the economic sanctions slapped in the wake of Pokhran II, India's Finance Minister Mr. Yashwant Sinha presented a realistic budget for the year 1999-2000 on February 27, 1999, addressing all sectors of the Indian economy and all sections of the people. While focussing on the rural economy, Mr. Sinha's budget proposals sought to turn the spotlight on the basic needs of the people such as housing in both rural and urban areas, education, rural development, etc. His blueprint for a vibrant economy has also given a boost to the small savings; an attempt has been made to bring the small investor back to the capital market. He expects savings to be mobilised through the stock market, lending a boost to investment in the economy.

Some of the highlights of the Budget are given below :

The Finance Minister has proposed an imposition of an across-the-board surcharge of 10% on Corporate Tax and a 10% surcharge on income-tax limited to those having total income of Rs. 60,000 or more.

* All income from UTI and other Mutual Funds is fully exempted from income-tax.

* To widen the national tax base and to identify potential tax payers the government had introduced the "One by Six" scheme which was extended to 35 cities in 1998-99. Building upon the success of this scheme, the government proposes to extend the scheme to 19 more cities with a population of more than 5 lakh.

* Buy-back of shares to attract only capital gains tax and not dividend tax.

* Mr. Sinha has proposed a comprehensive package of fiscal incentives in the housing sector. The interest on a loan for a self-occupied dwelling unit is exempted from tax upto a ceiling of Rs. 75,000 raised from the earlier ceiling of

Rs. 30,000. This concession will encourage middle class investors to take loans to purchase modest dwelling units.

* Tax on long-term capital gains for resident Indians on transfer of shares and securities reduced to ten per cent from 20, on a par with NRIs.

Indirect Taxes

In the realm of indirect taxes, the Finance Minister proposed an additional duty of Re. 1 on high-speed diesel as resource mobilisation for the infrastructure sector, rural development and social sector. The additional revenue arising from the levy of the duty would be utilised for road development, maintenance of highways and expressways and for the construction of railway overbridges and railway safety networks at unmanned level crossings.

* *Revision in Postal Rates.* The rate of printed post card is being raised from Rs. 1.50 to Rs. 2.00 of Competition Postcard from Rs. 3.00 to Rs. 4.00 of Inland Letters from Rs. 1.50 to Rs. 2.00.

* Under the excise proposals the Finance Minister has proposed to reduce the existing 17 major *ad valorem* rates to 3, namely, a central rate of 16%, a merit rate of 8% and a demerit rate of 24%.

* Existing seven major *ad valorem* rates of customs duty reduced to five basic rates—five per cent, 15 per cent, 25 per cent, 35 per cent and 40 per cent.

* Uniform customs duty surcharge of 10 per cent on all commodities except crude oil and petroleum products, items attracting 40 per cent rate of basic duty, certain GATT-bound items and gold and silver.

* Modvat claims allowed upto 100 per cent from 95 per cent.

The Budget aims to mobilise an additional tax revenue of Rs. 9,334 crore, mainly through the surcharge on income tax and customs and the Rs. 1 excise case in diesel. The surcharge on income tax is likely to contribute an additional Rs. 3,100 crore, customs an additional Rs. 1,469 crore and excise an additional Rs. 4,765 crore. The fiscal

deficit for 1999-2000 is projected at 4 per cent of the GDP and inflation rate for the coming year is likely to be about 5-6 per cent.

A salient feature of the budget is that the salaried class has been taxed more, and investors have been taxed less. "Indeed, there is an arithmetical correlation between the amount of extra taxes being raised from the salaried class, and the extra money that has been doled out to the investors," said the *Business Standard* in its Leader.

Outlays

The total Central Plan outlay has been raised by 17 per cent to Rs. 1,03,521 crores while the Central Plan assistance to States and Union Territories has been raised to Rs. 33,000 crore. The new budget has given a veritable boost to both agriculture and the social sector, the former's allocation hiked by 34.5 per cent and the latter's by 21.9 per cent. Even the allocation for education has gone up by 16 per cent with Rs. 4,700 crore earmarked for it in the financial year. The energy sector allocation has gone up by 14 per cent with an allocation of Rs. 27,381 crore.

BUDGET AT A GLANCE



(Figures in Rs crore)	1997-98 Actuals	1998-99 Budget Estimates	1998-99 Revised Estimates	1999-2000 Budget Estimates
Revenue Receipts	133901	161994	157665	182840
Capital Receipts	98167	105933	124247	101042
Total Receipts	232068	267927	281912	283882
Non-Plan Expend.	172991	195925	213541	206882*
Plan Expend.	59077	72002	68371	77000
Total Expend.	232068	267927	281912	283882*
Revenue Deficit	46449	48068	60474	54147
Fiscal Deficit	88937	91025	103737	79955*
Primary Deficit	23300	16025	26489	-8045

*Excludes small savings transfers

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The other vital sectoral allocations are defence : Rs. 45,694 crore up from Rs. 41,200 crore; communications : 16,811 crore.

Year of the Gram Sabha

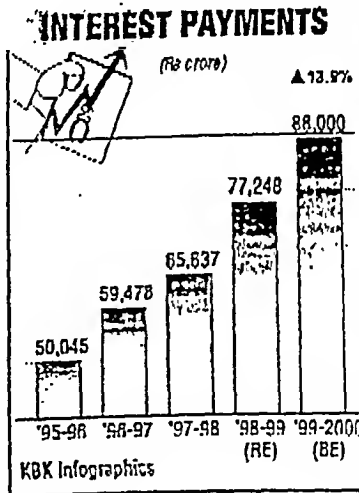
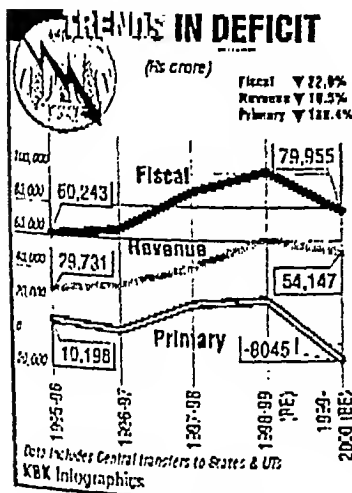
To ensure integrated provision of shelter, sanitation, and drinking water, the Finance Minister has proposed to launch a comprehensive "Samagra Awaas Yojana" which will embrace existing programmes including the Indira Awaas Yojana.

The Budget envisages the grassroot-level unit of Indian democracy, namely, the Panchayat Raj, to be one of the vital implementing agencies of the National Human Development Initiative launched as a new scheme. This will go a long way in empowering the weaker sections of the population

and improving the quality of rural life and narrowing down the rural-urban disparities.

The Finance Minister declared 1990-2000 as the "Year of the Gram Sabha" to affirm Government's resolve to set the process of decentralisation in motion, with human endeavour as the core objective of planning

In conformity with the laudable objectives of the recently announced



National Policy on the Aged, the Budget has taken special care of the needs of the senior citizens. The Budget has accordingly proposed a new scheme called "Annapurna" in 1999-2000 to provide food security for the poor aged citizens who have no income of their own and none to take care of them in the villages. "Annapurna" will provide 10 kg of foodgrains per month free of cost to all indigent senior citizens who are eligible for old age pension, but who are presently not receiving it and whose children are not residing in the same village.

"The existing Jawahar Rozgar Yojana will be modified to ensure that all funds are placed at the disposal of Gram Panchayats for creation of rural infrastructure. They will have the sole authority for preparation of annual

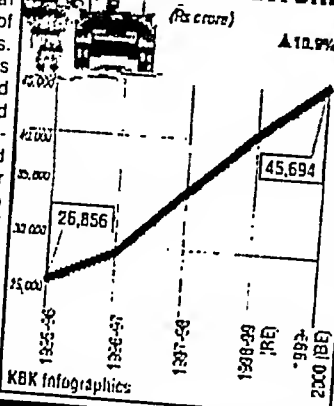
action plans and their implementation, including the power to execute works with the approval of the Gram Sabha. The modified scheme will be known as "Gram Samridhi Yojana".

"The Budget also purposes to integrate the multiplicity of self-employment programmes into a single unified programme to be known as "Swaran Yanti Gram Swa-Rozgar Yojana", which will have greater participation of the Gram Panchayats.

New Gold Deposit Scheme

Lakhs of families and various charitable and religious institutions hold a huge amount of gold—assets earning no income for the holders, who then incur costs to ensure security. To mobilise

DEFENCE EXPENDITURE



CENTRAL PLAN OUTLAY

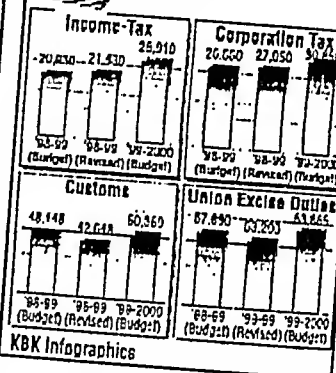
(By sectors, in Rs crore)

	'88-89 (RE)	'89-2000 (BE)
Agriculture & Allied Activities	2,771	2,735
Rural Development	7,738	7,843
Irrigation & Flood Control	345	348
Energy	23,978	27,381
Industry & Minerals	7,995	8,672
Transport	14,397	16,850
Communications	13,467	16,811
Science, Tech. & Environ.	2,389	2,808
General Economic Services	941	1,246
Social Services	14,240	17,385
General Services	256	261
Grand Total	88,482	1,03,521

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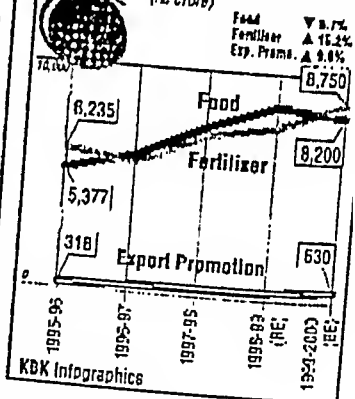
TAX COLLECTIONS

(Rs crore)



MAJOR SUBSIDIES

(Rs crore)



this idle gold, the Finance Minister has proposed a new Gold Deposit Scheme under which selected banks will be permitted to accept gold deposits and issue interest-bearing certificates or bonds which, on maturity, can be reclaimed in gold.

National Programme for Rural Industrialisation

The steady migration from rural areas to the cities can be checked up or slowed down only when the millions in rural India are lucratively employed in either agriculture or industry. When a multiplicity of agencies seek to promote rural industries, there is the danger of duplication and overlapping. To tide over this chronic malady, Mr. Sinha proposed

a National Programme for Rural Industrialisation (NPRI) integrating the efforts of the various agencies and ensuring active community participation. The new Programme will seek to set up 100 rural clusters every year to give a boost to rural industrialisation. This is being done for the benefit of the rural artisans and the unemployed youth.

Education Guarantee Scheme

The Budget has provided for an Education Guarantee Scheme at the national level to provide an elementary school in every habitation, which does not have one within the radius of 1 km. Initially the local community would provide the premises and select a local person as a part-time teacher. Teaching material and other assistance will be provided by the Central and State Governments.

while Gram Panchayat will mobilise contribution from the local community in cash and kind for running the school for at least two years. At least 1.8 lakh such schools will become operational during the next three years of the Ninth Plan.

Despite criticism here and there, the Union Budget 1999-2000 has been welcomed as a bold initiative that would not only boost the economy but assure a better quality of life for all sections of the people, more particularly, the poor.

Trade and Industry organisations have welcomed measures in the Budget for reviving the capital market. The initiative taken to attract investments in post-harvest technology would boost exports of value-added products, while grant of export-credit at international rates would give a boost to the exports. □

15. Cauvery Accord

Politics is the art of compromise and this was testified in abundant measure by the historic agreement reached by the Chief Ministers of Karnataka, Tamil Nadu, Kerala and Pondicherry on August 7, 1998 over the sharing of the waters of the Cauvery river. The credit for this breakthrough should go to the Prime Minister, Mr. Atal Behari Vajpayee who must have conducted any number of meetings to help the disputing riparian States see the flickering light at the end of the tunnel and secure a safe passage out of the impasse ever since Tamil Nadu and Karnataka took a stubborn stand on the 1991 interim award of the Cauvery Water Disputes Tribunal. For the Prime Minister, to find a settlement on Cauvery that had embittered relations between two neighbouring States and even caused bloody riots and that had once again made his chief coalition partner Ms. Jayalalitha to politicise another issue to secure more mileage in her battle of wits with BJP, it has been a perilous walk on the razor's edge. The Centre was all the more keen to find an amicable settlement expeditiously following the three weeks' time given by the Supreme Court to it to iron out differences between Karnataka and Tamil Nadu over framing a scheme to implement the interim award of the Cauvery Tribunal.

Cauvery river water sharing has been known to create frayed nerves between authorities in Madras and Bangalore for decades and the last time the river was on the boil once again was in 1996 when the Centre ironed out an interim solution leaving the sparring States sulking once again. In fact the dispute over Cauvery is more than a century old;

records show that the then Madras Presidency and the Maharaja of Mysore once reached an agreement on the use of the waters of the river that served best the interests of both the regions. In 1924, a pact between Mysore and Madras provided for long-term irrigation programmes in the Cauvery basin enabling Mysore to build the Krishnarajasagar Dam and Madras the Mettur Dam. While the 1892 agreement, forced on Mysore by the British, made it obligatory for the princely State to obtain prior permission of Madras before taking up any irrigation work, under the 1924 agreement, despite initiating the work on the Krishnarajasagar Dam near Mysore in 1911, the project could be completed only in 1931 because of the persistent problems created by the Madras Presidency. The 1924 agreement, with a life span of 50 years, expired in 1974.

The States of Tamil Nadu and Karnataka who share a larger portion of the stretch of Cauvery compared to Kerala and Pondicherry have been at war ever since 1974 and efforts to find a way out tended to produce more sound and fury than water for the thirsty paddy fields in both regions. While Tamil Nadu pleaded for the setting up of a tribunal, Karnataka preferred conciliation. The verdict of the Tribunal that came into being in 1991 directing Karnataka to release 205 tmc of water every year to Tamil Nadu followed by other directives triggered unprecedented violence in many parts of Karnataka, with many Tamilians fleeing for safer havens.

Cauvery has not been the only river of dispute. After the Reorganisation of States in 1956 more

bells in Brussels, these eleven European countries left behind their distinctive currency identities to launch a currency, single and common to all, challenging the mighty US dollar. As eleven currencies got locked to Euro, Britain, Sweden, Denmark and Greece chose to remain on the sidelines. The 290 million people of Euroland—as the eleven countries wedded to Euro are now being addressed—will, however, have to wait for three years before they can hold new Euro notes and coins.

The Ministers belonging to EMU ratified the irrevocable conversion rate finalised by the European Commission, the executive body of the EU, at their meeting in Brussels on December 31, 1998 to set in motion the third and the most crucial phase of the EMU. From its official launch at midnight on Thursday, the 31st December, 1998, the Euro is worth:

1.95583	German marks
6.55957	French francs
1936.27	Italian lire
166.386	Spanish pesetas
2.20371	Dutch guilders
40.3399	Belgian francs
13.7603	Austrian schillings
200.482	Portuguese escudos
5.94573	Finnish markka
0.787564	Irish pounds
40.3399	Luxembourg francs

(Based on these rates, the euro is expected to start trading at \$ 1.1665)

Around 50 billion coins and 13 billion notes will be needed to replace existing currency.

Pink, Healthy Baby

The virtual reality of EMU (European Monetary Union) with their pink and healthy baby, Euro, reminded one of the palmy days of the Roman Empire, consigning to the limbo of history the tattered chapters of European rivalry. It conjured up a vision of greater European prosperity and a possible United States of Europe. In fact, the Monetary Union is the most ambitious project since the grandiose plan of pan-European unity as conceived by Emperor Napoleon Bonaparte's vision of Europe, re-lived by the former British Prime Minister Winston Churchill.

Euro was born to EMU, and EMU was born to the dream of a united Europe. Those who revel in the grandeur of Europe trace the dream to the halcyon days of Julius Caesar, Charlemagne, Napoleon, Karl Marx and Adolf Hitler. Euro has even outlived the Franco-German animosities

thawing into a settlement with the signing of the Treaty of Rome in 1956. And coming to the recent times, Euro is the triumph of the authors of Maastricht Treaty, and above all, for Jacques Delors, Helmut Kohl and Francois Mitterand, the visionaries who conquered the scepticism of the detractors who scoffed at the idea of any possible economic and political unity in Europe. The birth of Euro also fulfils a dream nurtured for decades by visionaries such as former Luxembourg Prime Minister, Mr. Pierre Werner, who advocated a European currency as long ago as 1960.

In the meanwhile, Euro has already appeared on bank accounts, travellers cheques and on plastic cards. Pending the appearance of hard cash in January 2002, the national currencies of the 11 members of EMU will continue in circulation.

Existing national central banks, such as the powerful German Bundesbank, will continue to exist, in effect, as branches of the European Central Bank, which will from now onwards manage the future of Euro. The national banks will transfer 50 billion Euro (\$58.38 billion) in reserves to the Central Bank.

Britain is in no frame of mind to surrender the pound sterling as it and its people feel that Euro is a challenge to their national identity, sovereignty, tradition and superior status. A few conservative politicians see the Euro as a German racket designed to fulfill an old German dream through new methods. But none can predict the future. Britain might change its stand and throw in her lot with the rest of Europe.

New Economic Superpower

In the first week after Euro came into being, it sent shudders around world markets. The Japanese Foreign Minister, Mr. Kichi Miyazawa said, "The advent of the Euro is widely expected to produce a new economic superpower to rival the United States and its dollar." Greece, which has been deemed economically unfit to join the Euro now, reconfirmed its desire to be ready in two years and said its drachma would be pegged to the Euro. Denmark also announced a formal link between its crown and the new currency.

The Australian Government warned companies in the country that they faced a "competitive disadvantage" investing in Britain because it was outside the EMU. Australia is an important trading partner of Britain and the comment of the Australian Government has caused deep embarrassment for the British Government which has so far claimed that investment in Britain by MNCs may not be affected by Britain's stand to stay out of EMU. Euro

Euro Vs Dollar

The first official American reaction to the emergence of Euro came from President Bill Clinton himself, who said that "a strong and stable Europe, with open markets and robust growth, is good for America and for the world", while US Treasury Secretary repeated his old mantra that what is good for Europe will be good for the USA. Though USA has shrugged off fears of Euro posing a challenge to the dollar, the crux of the matter is that the European Eleven is a real match for US economic might. Euroland's total annual output of about \$6.5 trillion compares to the almost \$8 trillion in the US. And, according to European estimates, the Euro zone will form the world's greatest trading partner, with its exports in 1997 being 25 per cent larger than those of USA. The Euro zone's weight in global economy has prompted some to fear a shift of investor money out of the US dollar into the Euro, which would make it harder for US to attract the capital it needs to finance its rising trade deficit, eventually pushing up interest rates and putting a damper on growth.

More people (290 million) live in the EMU zone than in USA (265 million) and the total GDP of these countries is almost as large as that of USA. The US dollar roughly makes up 56 per cent of international reserves even though US's share of the world economy is only 20 per cent.

Predicts the US economist Fred Bregsten: "The Euro will move up alongside the dollar in what will amount to a bipolar international monetary regime, replacing the dollar dominance of the past 60 or 70 years."

Exciting days are ahead for the members of EMU. One European Commission study estimates that European businesses now spend some \$ 12.8 billion a year on currency conversion within the European Union, or 0.4 per cent of the EU's gross domestic product. There is growing optimism that as the Euro forces greater efficiency, more aggressive strategists could add as much as one percentage a year to Europe's long-term GDP growth.

Euro And India

In India, the Standard Chartered Bank struck the country's first forex option deal in pan-European currency on January 4, 1999 even as the market was feeling upbeat about Euro getting even with dollar in the days to come.

According to Dr. Dietrich Kebschull, Director of Indo-German Export Promotion Project, Euro has opened in the range of Rs. 49.50 and is expected

to appreciate in the coming months because of the soaring demand for the new currency. Mr. Kebschull said that Euro will help India in globalisation as well as boosting the country's trade with the European Union. He said as EU is the most important trading partner for India, its switching to Euro will reduce India's reliance on dollars for trade purposes.

What is going to be the extent of the impact of Euro on India? India's average annual exports with the present EMU block of eleven countries ranged from \$6300 million in 1955-96 to \$6142 million in 1996-97. Imports likewise stood at \$7816 million and \$7974 million during the same period. On an average, both exports to and imports from the EMU block ranged between 18 and 21 per cent of the total external trade, making it the largest trading partner. In the months and years ahead, we can ill-afford to ignore the growing impact of Euro on India's trading practices and banking activities. In a likely scenario of Euro offering tough challenges to the US dollar, EMU may insist on Euro-invoicing instead of US dollar.

A major advantage for Indian banks operating in India will be simplification of the number of nostro accounts abroad, where settlement risks and transaction cost involving more than a dozen currencies will be limited to one. The rationalisation of nostro accounts will improve efficiency, easy reconciliation and better management of funds deployed. By encouraging Indian investors to invest in EMU with comparatively less risk and investment portfolios, the Euro bonds and securities issues will swell. Likewise, Indian banks abroad, especially those functioning in Euro zones, can get the benefit of less complex foreign debt, funds and a whole of range of banking transactions instead of dozen currencies.

Euro is likely to be a boon for Indian exporters frequently travelling to the EMU zone. The traveller will save on at least three per cent foreign exchange since there wouldn't be any need to change currencies while entering a different country.

Since the Indian financial year is from April to March, it is quite likely that trading in Euro will gain momentum only after April 1999. The President of the Federation of Indian Export Organisations says that even though there is no compulsion to use Euro during the transitional period (from January 1, 1999 to January 1, 2002), still bankers, customs, the RBI and the like should gear themselves up and start holding seminars, workshops, and training programmes for their staff and develop software for the Euro.

17. 46th National Film Awards

At a time when Indian cinema in general and Bollywood films in particular are facing a bleak period at the box-office, the 46th National Film Awards 1998 reflected a decisive come back for Hindi cinema after several years. The awards may perhaps be aptly described as *Godmother* awards with this controversial un-released film bagging the largest number of awards (six) for any single film including that of Best Actress for Shabana Azmi, the leading light of the film. Besides bagging this award, and that too in the silver jubilee year of her film career, she had the unique privilege of enacting a hero's role in a dramatic and passionate portrayal of a woman in man's world dealing with the contemporary power structure and confronting violence, corruption and passion, depicting more or less a true chronicle of Porbander's underworld she-don Santokben's life.

In fact, Vinay Shukla's *Godmother* whose screening has been banned through a court stay arising out of some objections by Santokben herself, has by its overwhelming dominance in awards winning, even eclipsed veteran director Shyam Benegal's latest creation *Samar* (another yet-to-be-released Hindi film) which bagged two awards including the Best Feature Film for "innovatively and humanely dealing with present day social evils" as also for Best Screenplay for Ashok Mishra. *Godmother* also won awards for Best Feature Film in Hindi in the language category, and an award for Best Lyric *Mati Re Mati Re* by Shabana's husband Javed Akhtar for the third time, Best Male Playback Singer Award for Sanjeev Abhyankar for *Suno re Bhaiya*, Best Editing Award for Renu Saluja and Best Music Award for Vishal Bhardwaj. Alka Yagnik won the Female Playback Singer Award for the film *Kuch Kuch Hota Hai*.

Interestingly, a majority of the 17 awards and mentions bagged by Hindi films have gone to mainstream commercial cinema. Last year's blockbuster *Kuch Kuch Hota Hai* by Karan Johar which bagged the award for the Best Popular Film Providing Wholesome Entertainment won the same award for the second successive year. The last time a Hindi film bagged the Best Film Award was *Bagh Bahadur* by Buddhadeb Das Gupta in 1989.

Both the supporting acting awards were also bagged by Hindi films: Manoj Bajpai in Ram Gopal Verma's *Safar* for his flawless performance of the eccentric underworld don trapped in a cold blooded yet vulnerable system and Suhasini Mulay for Gulzar's *Hu Tu Tu*. While Manoj has already received several popular awards for this film, *Hu Tu Tu* is

Suhasini Mulay's second film as an actress after her debut in *Bhuvan Shome* in the late seventies.

Ajay Devgn shared the award as Best Actor for "a restrained and moving performance of an angry youngman exasperated with the falling system" in *Zakhm* directed by Mahesh Bhatt, with popular Malayalam superstar Mammooty who essayed a memorable biographical performance in the English film *Dr. Babasaheb Ambedkar* directed by Jabbar Patel.

Rajeevnath won the award for Best Director for his Malayalam film *Janani*, while Daya in the same language by Venu was selected for the Indira Gandhi Award for the First Film of a Director. The Nargis Dutt Award for the Best Film on National Integration was won by *Zakhm* "for boldly dealing with social and religious strife, communal tensions, violence and disharmony in contemporary times." The film was produced by Pooja Bhatt who also enacted the main role.

In *The Forest Hangs a Bridge* by Sanjay Kak won the Best Non-feature Film Award, while *Cinemaee Bhasha Aur Hindi Samvaadon Ka Vishleshan* by Dr. Kishore Vaswani was selected as the best book on cinema with Meenakshi Shedde being chosen as Best Film Critic. There was also special mention of Gaston Roberge for the book *Communication Cinema Development*.

A record number of 114 features in different Indian languages and English—the highest-ever—were viewed by a 17-member jury headed by veteran filmmaker D.V.S. Raju for selecting the best productions of 1998. Renowned cinematographer and Director Shaji N. Karun headed the five-member non-feature jury and senior author-filmmaker M.T. Vasudevan Nair chaired the three-member jury to select the best book on cinema and the best film journalist. Apart from the Swarna Kamal and the Rajat Kamal, the cash component of the awards ranges from Rs. 10,000 to Rs. 50,000 for feature films and Rs. 10,000 to Rs. 20,000 in non-feature films.

Other Hindi films to be awarded are *Kabhi Pass Kabhi Fail* by Virendra Saini which is the Best Children's Film, and *Dil Se* which has won two awards, including one for Best Audiography for H. Sridhar.

Perhaps for the first time in the history of the National Film Awards, a single individual has won two awards each in consecutive years, and each award is for a different film. Renowned cameraman Santosh Sivan, who had received the regional language film award for *The Terrorist* and for

cinematography for *Iruvar* in the National Awards last year, has been named for environmental conservation film *Malli* and for cinematography in *Dil Se*. *Malli* also gets the award for the Best Child Star, Baby Amma (Shwetha). The film *Dr. Babasaheb Ambedkar* also gets the award for Best Art Direction to Nitin Desai, while S.B. Satheesan gets the costume award for *Daya*.

The Bengali *Atmijo Swajan* by Raja Sen is the Best Film on Family Welfare while the Malayalam *Chinthavishtayaya Shyamala* by Sreenivasan gets the award for showing a woman's struggle. Venki gets the special effects award for the Tamil film *Jeans*, while the Malayalam film *Daya* gets one more award: to Vrinda for choreography.

The Special Jury Award went to Asoke Viswanathan's *Kichhu Sanlap Kichu Pralap* in Bengali. Three persons have come in for special mention: the veteran Dasari Narayan Rao for the Telugu film *Kante Kuturne Kanu*, actor Prakash Raj for the Telugu film *Anthahpuram*, and actress Manju Warner for the Malayalam film *Kannezuthi Potluthu Thottu*.

While Hindi leads with 17 awards, Malayalam is next with seven, followed by Tamil with four; Bengali, English, and Telugu with three each, Assamese, Kannada, Punjabi, Oriya and Marathi with one award each.

The language-wise awards are Assamese *Kuhkhal* (Jahnu Barua), Bengali—*Asookh* (Ritu Pano Ghosh), English—*Dr. Babasaheb Ambedkar* (Jabbar Patel), Kannada—*Hoomale* (Nagathihalli Chandrashekar), Malayalam—*Agneesakshi* (Shyam Prasad), Marathi—*Tu Tithe Mee* (Sanjay Surkar), Oriya—*Nandan* (A.K. Bir), Punjabi—*Shaheed-e-Mohabbat Boola Singh* (Manoj Punj), Tamil—*Housolull* (R. Partheban) and Telugu—*Tholi Prema* (A. Karunakaran).

Among the non-features, the best first non-feature film of a director award has gone to Rajeev Raj for the Malayalam short *Repentance*. The other awards include anthropological/ethnographic—*Kherwal Pamb* (Santhali)—*Sankar Rakshit*, arts/cultural—*A painter of eloquent silence* *Ganesh*

Pyne (English—Buddhadeb Das Gupta); environment—*Willing to Sacrifice* (English—B.V.P. Rao); and historical reconstruction—*Anna Lives* (Tamil—Tamil Nadu Films Division). The Best Short Fiction Film has been won by the Hindi film from the Film and Television Institute of India, *Jee Karta Hai* by Hansa Thapliyal, while the biographical film award has been shared by two Malayalam films by the same director, M.R. Rajan: *Premji Ithihasathinte Sparsam* and *Unarvinthe Kalam*—M.R.B.

The other short film awards are: Social issues—*Malli* (Tamil—R. Madhava Krishnan); motivational—*Silent Scream* (English—Vikram K. Kumar); exploration—*Malana*—*In search of* (English—Vivek Mohan), investigative—*Saga of darkness* (Bengali—Gautam Sen); animation—*Education only her future* (Music—Arun Gongade, Films Division); and family welfare—*Sentence of Silence* (English—Joshy Joseph, Films Division). Ranjan Palit and Reena Mohan got awards for cinematography and editing of *In The Forest Hangs A Bridge*; P.M. Satheesh got the audiography award for *Kumar Talkies* in Hindi; and music director Biswadeb Dasgupta won the award for *Ganesh Pyne*. Special jury award went to Pawan Malhotra for his acting in the film *Faqr* in Hindi by Gautam Ghose, while special mention was made of Unni Vijayan for FTII's *Jee Karta Hai*.

The Kannada film *Hoomale* by N. Chandrashekar winning the language category award is about widow rehabilitation and has been produced by Usha Rao K.S. who was herself a widow until Mr. N. Sripada Rao, who runs the *Parivarthana* trust in Karnataka for rehabilitation of widows, married her.

Among the institutions producing films, the National Centre for Children and Young People (NCCYP) has won four awards for three films: *Kabhi Pass Kabhi Fail*, *Malli* by Santosh Sivan, and A.K. Bir's *Nandan* which won the Oriya language award. The National Film Development Corporation won awards for *Samar* and *Dr. Babasaheb Ambedkar*, while the Films Division received two awards: animation for *Education only her future* by Arun Gongade and family welfare for *Sentence of Silence* by Joshy Joseph.

18. 30th International Film Festival Of India

The last film festival of the millennium in the country, the 30th International Film Festival of India (IFFI) was organised in the City of Pearls, Hyderabad, from January 10 to 20, 1999. The ageless Dev Anand lit the ceremonial lamp to

inaugurate the ten-day film festival at the Lalitha Kala Thoranam auditorium in the presence of Union Minister for Information & Broadcasting, Mr. Pramod Mahajan, his Minister of State, Mr. Mukhtar Abbas Naqvi and the Andhra Pradesh Chief Minister,

Mr. N. Chandrababu Naidu. Rajya Sabha member and glamorous film actress Jayaprada co-hosted the programme and Southern actress Meena assisted the Chief Guest in lighting the lamp. The star turnout at the opening included Amitabh Bachchan, Shabana Azmi and Shekhar Kapur.

The swagger in the gait of 75-year-old Dev Anand was intact as he inaugurated the film extravaganza and recalled the first film festival he had attended way back in 1952. In an enthusiastic speech, he said he was proud to be part of the cine world, 20th century's gift to humankind. Anand complimented Hyderabad's Film City for its hi-tech gizmos, adding that he was inspired to make a couple of films there.

Swagatam, danced to A.R. Rahman's *Vande Mataram*, unfolded the evening's programme. A *potpourri* of Bharata Natyam, Kuchipudi and Kathakali, the ballet was vigorous and short. Folk dances of Andhra and laser show set the stage for the evening's finale—screening of Shekhar Kapur's 16th-century costume drama, *Elizabeth*. The film captures the trying days of England's so-called virgin queen, who finds that even her childhood sweetheart, now her lover, is plotting to finish her. This has won for 53-year-old Kapur the Best Director Award from the National Board of Review of Motion Pictures in New York. The film may be melodramatic and controversial, but controversy is nothing new to Kapur; his earlier effort *Bandit Queen* was equally controversial.

Simultaneously, internationally renowned painter, M.F. Hussain opened his *Cinema Ghar* at Banjara Hills. It would screen black-and-white classics of Indian Cinema. Andhra Pradesh Chief Minister, Mr. N. Chandrababu Naidu and Hussain's muse, Madhuri Dixit, were present on the occasion.

The ten-day event showcased about 200 movies from nearly 50 countries, featuring 85 films in the Cinema of the World section, including Bernardo Bertolucci's *Besieged*. Bertolucci was honoured with a Lifetime Achievement Award by the Information & Broadcasting Minister, Mr. Pramod Mahajan on January 15, 1999. The award consisted of a shawl, scroll of honour and a gold medal. The famed creator of *The Last Emperor* and *The Little Buddha* paid a warm tribute to India for having initiated him into the world of cinema. He named Satyajit Ray's *Pather Panchali*, Godard's *Breathless* and *La Dolce Vita* as the three films that had inspired him.

At a special ceremony held to present him with Lifetime Achievement Award, introduced this year by the Information & Broadcasting Ministry as the

international equivalent of the Dadasaheb Phalke Award, Bertolucci confessed: "I have stolen from Satyajit Ray's films and used them in my films. But they have been so well hidden, nobody has been able to discover them. Thank you India for helping me to be filmmaker."

The Italian maestro, who began as a poet, first published his book of poems, *In Search of Mystery*; at the age of 20. He made his first film when he was just 21, believing that cinema was "the ideal place where all the languages come together: sculpture, music, painting, poetry and prose". *The Grim Reaper*, his debut film was followed by a series of landmark films which include *The Conformist*, *The Last Tango in Paris*, *1900*, *The Last Emperor* and *The Little Buddha*.

The extravaganza was, however, marked by controversies regarding the poor screening of films, debate on censorship in the light of protests against Deepa Mehta's *Fire* and absence of any Telugu film in the Indian Panorama section when the Telugu film industry was 'hosting' the festival.

Indian Panorama

The Indian Panorama included 16 feature films and 20 non-features. Girish Kasarwalli's *Thal Saheb*, winner of the National Award for Best Feature Film in 1998, was among the 16 films which included *Agnisakshi* by R. Shyama Prasad; *Chalo America* by Piyush Jha; Tapan Sinha's *Ajab Ganyer Ajab Katha*; S. Balachandra Menon's *Samaantharangal*; T. Hariharan's *Ennu Swanthan Janakutty*; Jahnu Barua's *Kukhkal* and Menajo Punj's *Shaheed-e-Mohabbat*.

Incidentally, this was the second Punjabi film to be included in the Panorama section, the first being *Marhi Da Diva* by Surendra Singh which was entered in the early 90s Laboni Sarkar's *The Saga of Darkness*, a documentary set in West Bengal tackling the subject of witchhunt, was a part of the non-feature film section.

The festival's closing film was *Life Is Beautiful* by Roberto Benigni. The film is an Italy Columbia/USA production, which landed the Grand Jury Prize at Cannes last year. Benigni's film has also won virtually every major award at the Donatello Awards (the Italian Oscars).

Described by the director as "a tragedy made by a comic", the film is essentially a love story for which the screenplay has been co-written by Vincenzo Cerami and Benigni himself. The film was scheduled to arrive in time for the Cinema of the World section but the print was delayed and so it secured the honour of being the closing film.

19. Australia Wins World Cup '99

Finally, after a marathon spreading over 5 weeks, curtain was rung on June 20 on World Cup '99, the biggest and the most absorbing event of the cricketing world which kept millions of viewers world-wide agog and glued to their TVs, often past mid-night, in an air of expectancy, thrill and enthusiasm; with Australia inflicting a crushing and a humiliating defeat on the mighty yet unpredictable Pakistan who had the agonising experience of scoring the lowest ever total in the history of World Cup finals (132 in 39 overs – the previous lowest being 140 by West Indies against India in 1983) mainly due to the superb and incredible performance of their spin wizard Shane Warne, claiming 4 Pakistani wickets in just 9 overs; thus richly deserving the coveted 'Man of the Match' award. Earlier, in a classic encounter against South Africa in the semi-final—perhaps the greatest one-day ever played and the first of the 199 World Cup matches to end in a tie, the world-renowned leg-spinner lapped up 3 wickets in eight balls without conceding a single run with his ultimate tally of 4 wickets off 10 overs bagging the 'Man of the Match' award. Thus the Australian Vice-Captain not only annexed two Man of the Match awards in the Seventh World Cup, the last marathon of the Millennium, but also crossed 200 wickets mark in 125 one-day Internationals. He also emerged a joint leader along with Geoff Allott of New Zealand by capturing 20 wickets in a single World Cup.

The battle royal between two mighty giants, each fancied to win, was virtually reduced to a non-event with Aussie openers Adam Gilchrist (54 off 36 balls) and Mark Waugh (37 not out) launching a blitzkrieg to score 75 runs in the first 10 overs and coasting their side home to an easy and memorable victory in just 20.1 overs (with a record 29.5 overs to spare) before a spell-bound capacity crowd of 30,000 and a shell-shocked Pak team and millions of its fans both at Lord's as well as at home and abroad. Thus, Australia, which had a lean patch earlier came up brilliantly to script their second World Cup triumph, the first being in 1987 (equalling the record of West Indies), after the most one-sided, dullist and shortest (59.1 overs) final in the 24-year history of the Cup.

Buoyed by their almost consistent winning spree (except an unexpected defeat against Bangladesh as also against India) and exalted with the flush of a spectacular and 9-wicket convincing victory against New Zealand in the semi-finals, an over-confident Pakistan team was expecting a rousing reception on a triumphant return to Islamabad, but was left in a very sullen and despondent mood with its captain reportedly deciding not to return with the rest of his side after their humiliation at Lord's probably apprehensive of the repeat of the ugly reprisals in the aftermath of 1996 World Cup fiasco against their arch-rivals India, when his father was kidnapped, his effigy burnt and house stoned due to fans' fury. Even this time, the distraught Pak supporters burnt his effigy as also of Inzamam-ul-Haq at Lahore, Karachi, Multan and elsewhere accusing them of 'match fixing and bribery' over this 'stunning' debacle.

The 'Player of the Tournament' award to Lance Klusener of South Africa must be embarrassing and a self-mortification experience to him since it was his momentary sudden death decision which resulted in the run-out of Allan Donald at the crucial juncture—semi-final against Australia, when the game was almost in South Africa's kitty.

India, considered a major force before the tournament, even failed to qualify for the Semi-finals notwithstanding the valiant knocks of its star batsmen – Rahul Dravid (who scored 461 runs – the maximum in this World Cup) and Sourav Ganguly (who created a world record by notching up 183 against Sri Lanka, bettering the record of legendary Kapil Dev (175)). Indeed, India's was the strongest batting line-up and it had the distinction of scoring the most sparkling first 5 centuries of the tournament yet it lost to South Africa and ignominiously to Zimbabwe in the League matches and later in the crucial Super-Six matches to Australia and New Zealand, mainly because of lack of coordination, failure of its star batsman Sachin Tendulkar as also, to some extent, of its bowlers. According to Kapil Dev, the hero of India's victory in 1983 World Cup, "We had the ability and experience but each player seemed to be playing for himself. The lack of support was the factor in the defeat of perhaps the most flamboyant team we had in the last three World Cups." □

World Cup 1999 At A Glance

May 14 - June 20, 1999

TOP SCORERS

Runs	Batsman	Country
461	Rahul Dravid	India
398	Steve Waugh	Australia
379	Saurav Ganguly	India
375	Mark Waugh	Australia
368	Saeed Anwar	Pakistan

Runs	Batsman	Country
367	Neil Johnson	Zimbabwe
354	Ricky Ponting	Australia
341	Herschelle Gibbs	South Africa
318	Roger Twose	New Zealand
312	Jacques Kallis	South Africa

CENTURIONS

Runs	Batsman Vs Country	Date	Venue
183	Saurav Ganguly (India) Vs Sri Lanka	May 26	Taunton
145	Rahul Dravid (India) Vs Sri Lanka	May 26	Taunton
140	Sachin Tendulkar (India) Vs Kenya	May 23	Bristol
132	Neil Johnson (Zimbabwe) Vs Australia	June 9	Lord's
120	Steve Waugh (Australia) Vs South Africa	June 13	Headingley
113	Saeed Anwar (Pakistan) Vs New Zealand	June 16	Old Trafford

TOP WICKET-TAKERS

Wickets	Bowler	Country
20	Geoff Allott	New Zealand
20	Shane Warne	Australia
18	Glenn McGrath	Australia
17	Lance Klusener	South Africa
17	Saqibain Mushlaq	Pakistan
16	Shoaib Akhtar	Pakistan
16	Allan Donald	South Africa

Wickets	Bowler	Country
15	Wasim Akram	Pakistan
14	Damien Fleming	Australia
13	Azhar Mahmood	Pakistan
13	Abdul Razzaq	Pakistan
12	Neil Johnson	Zimbabwe
12	Allan Mullally	England
12	Mark Ealham	England

TOP BOWLING FIGURES

Wickets-Runs	Bowler Vs Country	Date	Venue
5-14	Glenn McGrath (Australia) Vs West Indies	May 30	Manchester
5-21	Lance Klusener (South Africa) Vs Kenya	May 26	Amstelveen
5-27	Venkatash Prasad (India) Vs Pakistan	June 8	Old Trafford
5-31	Robin Singh (India) Vs Sri Lanka	May 26	Taunton
5-35	Saqibain Mushlaq (Pakistan) Vs Bangladesh	May 31	Northampton
5-36	Shaun Pollock (South Africa) Vs Australia	June 17	Edgbaston

HIGHEST TEAM TOTALS

Runs-Wickets	Countries	Date	Venue
373-6	India Vs Sri Lanka	May 26	Taunton
329-2	India Vs Kenya	May 23	Bristol
303-4	Australia Vs Zimbabwe	June 9	Lord's
287-5	South Africa Vs New Zealand	June 10	Edgbaston
282-6	Australia Vs India	June 4	The Oval
275-8	Pakistan Vs Australia	May 23	Headingley
275-8	Sri Lanka Vs Kenya	May 30	Southampton

LOWEST TEAM TOTALS

Runs	Countries	Date	Venue
69	Scotland Vs West Indies	May 27	Leicester
103	England Vs South Africa	May 22	The Oval
110	West Indies Vs Australia	May 30	Manchester
110	Sri Lanka Vs South Africa	May 19	Northampton
116	Bangladesh Vs New Zealand	May 17	Chelmsford
121	Scotland Vs New Zealand	May 31	Edinburgh
123	Zimbabwe Vs Pakistan	June 11	The Oval
132	Pakistan Vs Australia	June 20	Lord's

THE SECOND HAT-TRICK OF THE WORLD CUP

Saqibain Mushtaq joined the Indian speedster Chetan Sharma who has the distinction of recording the First Hat-Trick in the World Cup. Saqibain claimed the wickets of Henry Olonga, Adam Huckle and Mpello Mbangwa of Zimbabwe in a World Cup '99 Super-Six match on June 11, 1999. Chetan claimed the wickets of Ken Rutherford, Ian Smith and Ewan Chatfield of New Zealand in 1987 World Cup.

20. India And The Asian Games

Comparisons could be at once odious and stimulating if we take stock of India's performance at the 13th Asian Games in Bangkok. Compare India with China, Japan and South Korea and we fall by the way side, but compare our performance with the last Asian Games, India can pat herself for her stellar performance, more particularly in hockey and athletics. While P.T. Usha thundered on the tracks, Jyotirmoyee Sikdar has emerged as India's budding "Golden Girl" and India's hockey team led by Dhanaraj Pillai has broken the 32-year-jinx on hockey glory by paving the way for our easy entry into the hockey event in the 2000 Olympics. But a country of India's size has nothing to boast over compared to the massive medal haul of countries like China, South Korea and Japan.

What India has achieved in Bangkok in December 1999 could be better by Indian standards, but dismal by both Asian and international standards.

With a haul of 35 medals in all—seven gold, eleven silver and seventeen bronze—emerging as the ninth in the Asian Games medal ladder, India has inched forward from Hiroshima 1994 where it bagged a mere 4 gold, three silver and 15 bronze. But look at China, kilometres far ahead of India on the top rung of the ladder with a massive 129 gold, 78 silver and 67 bronze, followed by South Korea with 65 gold, 46 silver and 54 bronze and Japan with 52 gold, 61 silver and 68 bronze.

The massive hoist made by such countries as the host Thailand, Kazakhstan and Taiwan must make us sit up and ponder our future in sports, but our future will continue to remain futuro imperfect if we refuse to learn from the past and the present.

India won its seven gold medals—in men's hockey (1), athletics (2), kabaddi (1), billiards (2) and boxing (1). Eventwise, it was in athletics India did better than in any other event, medalwise.

The 'golden' beginning was made by Calcutta's Jyotirmoyee Sikdar who boosted India's morale with the first gold for 1,500 metres followed by another gold in 800 metres. Producing one of the most outstanding performances for India before a packed crowd at the Thammasat University, the Indian quartet of Lijo David Thottan, P. Ramachandran, Paramjit Singh and anchor Jata Shankar even raised gold medal hopes by leading into the final leg before coming second behind Japan, who set an Asian Games record of three minutes 01.70 seconds in the 4 x 400 m relay. However, the Indian quartet, by clocking a brilliant 3 : 02.62 had bettered its earlier record in Calcutta. For India's P.T. Usha December 19 was a bad day when the 21-year-old Jincy Philips replaced her in the women's relay team that comprised besides Jincy, Jyotirmoyee Sikdar, Rosa Kutty and K.M. Beenamol, winning for India another silver. Other athletes to win silver

MEDALS TALLY

Nations	G	S	B	Total
China	129	77	68	274
South Korea	65	47	52	164
Japan	52	61	68	181
Thailand	24	26	40	90
Kazakhstan	24	24	30	78
Taiwan	19	17	41	77
Iran	10	11	13	34
North Korea	7	14	12	33
India	7	11	17	35
Uzbekistan	6	22	12	40
Indonesia	6	10	11	27
Malaysia	5	10	14	29
Hong Kong	5	6	6	17
Kuwait	4	6	4	14
Sri Lanka	3	0	3	6
Pakistan	2	4	9	15
Singapore	2	3	9	14
Qatar	2	3	3	8
Mongolia	2	2	10	14
Myanmar	1	6	4	11

were Anil Kumar in men's discus throw, Shakti Singh in men's shotput and Sunila Rani in women's 5,000 metres. Sunila Rani won a bronze too in women's 1,500 metres.

India hoped a lot on Paramjit Singh, but he could get only a bronze in men's 400 metres. Other men who made it with a bronze medal included Bahadur Prasad (1,500 m), and Gulab Chand (10,000 m). The women who won bronze in athletics were Rachita Mistry (100 m), Neelam J. Singh (shotput) and Gurmeet Kaur (Javelin).

Billiards had its pleasant surprises. Ashok Shandilya topped his compatriot and reigning world professional billiards champion Geet Sethi in a friendly but nerve racking final on December 19 to claim the billiards singles gold medal. However, Sethi and Shandilya clinched India's first gold from the green baize by claiming an equally thrilling billiards doubles final on December 17. Other highlights of the billiards that made its debut in the Asian Games right now were : silver : Sethi (singles) and Bronze: Devendra Joshi and Balachandra Bhaskar (doubles).

Much needs to be said or unsaid about the way those who select our sportspersons for international events when we learn that he who had gone to the Asian Games without the government's clearance won the gold for boxing. Did they ever dream that

the Manipuri bantamweight pugilist Dingko Singh would land the sharpest punch of his career by snatching the gold ? Apart from N.G. Dingko Singh (gold for bantamweight 54 kg), India's Gurcharan Singh won bronze in light heavy 81 kg.

For India, it was home coming in the case of hockey : a return to the 'golden' days after a long, agonising 32-year wait. A bunch of motivated players led by Dhanaraj Pillai and stalwarts like Baljeet Dhillon, Ashish Ballal and Ramandeep Singh and coach M.K. Kaushik made India on the comeback trail to retrieve the lost glory. The last time India won a major men's hockey title was at the Moscow Olympics in 1980. Before this their only World Cup triumph was in 1975 at Kuala Lumpur, thereafter claiming the first Asian Games gold in the very city of Bangkok. Victory at Bangkok has spared the Indian men's team the painful process of qualifying for the 2000 Sydney Olympics, giving them a direct entry. India's women too did their best in hockey, but had to settle for a silver.

India had to be satisfied with silver in the shooting events : trap team (Mansher Singh, Manavjit Singh and Zoravar Singh), Jaspal Rana (centre fire pistol individual) and centrefire pistol team (Ashok Pandit, Ved Piloniya and Rana).

It was bronze all the way for India's tennis stars : for men's singles (Mahesh Bhupathi and Prahlad Srinath) and mixed doubles (Bhupathi and Nirupama Vaidyanathan) and men's team (Bhupathi, Srinath, Syed Fazaluddin, Nitin Kirtane and Vijay Kannan).

While the Indian team won gold in Kabaddi, It ended with bronze in both equestrian and rowing. Karnam Malleswari brought glory to herself and her country when she won silver in 63 kg, the first medal for India in the 13th Asian Games.

The Award for the Most Outstanding Athlete of the 13th Asian Games was received by Japan's Koji Ito, winner of the triple gold, 100, 200, and 4 x 100 relay in athletics, from the Samsung President Yoon Jong-Yong. Ito set the Asian record in 100 metres.

Describing the 13th edition of the Games as a grand success, Sheikh Ahmed Al Fahd Al Sabah, President of the Olympic Council of Asia, referred to the 14 world records and 59 Asian Games records set during the two-week competition.

In all, 6,554 athletes participated in 36 sports at the Bangkok Games. The following is the Medals Tally of the top 20 nations in the XIII Asian Games.

The next Asian Games will be held in Pusan, South Korea, in 2002.

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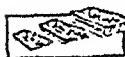


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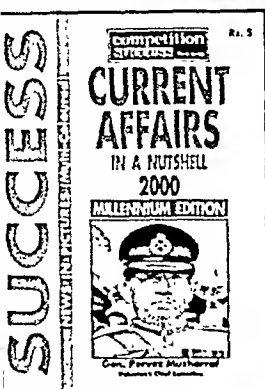


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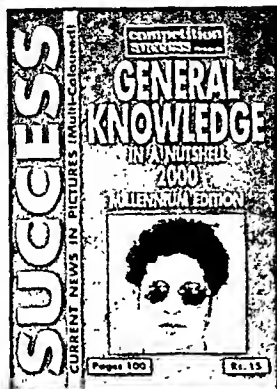


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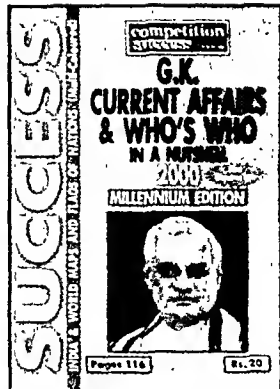
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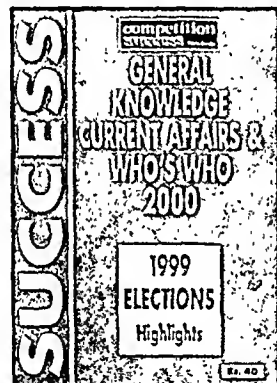
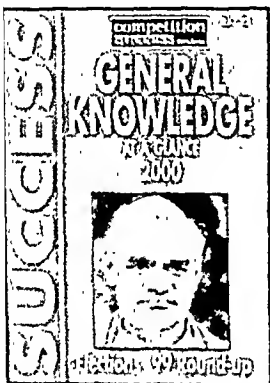
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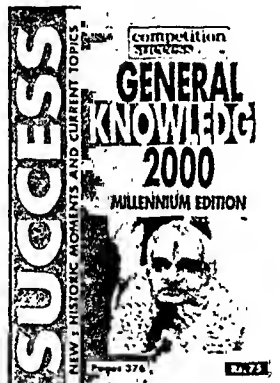
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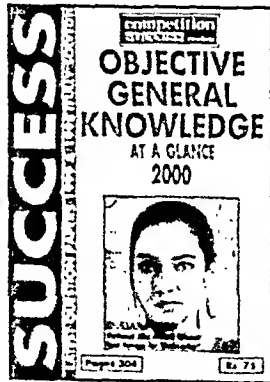
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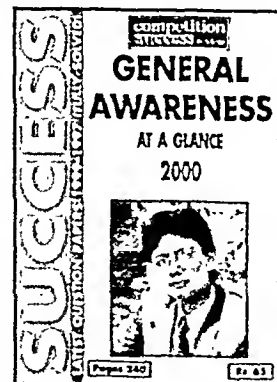
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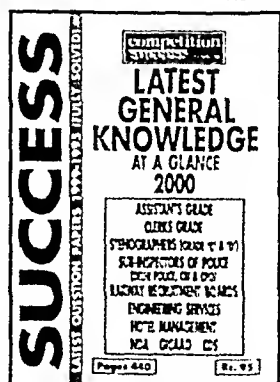
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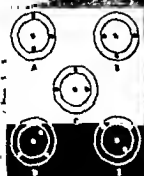


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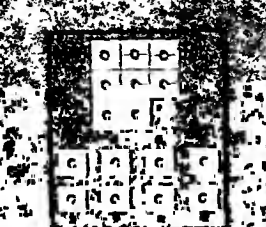
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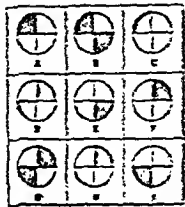
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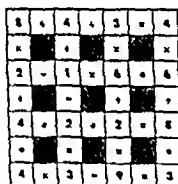
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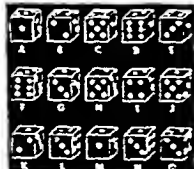
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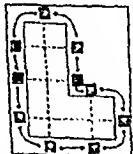
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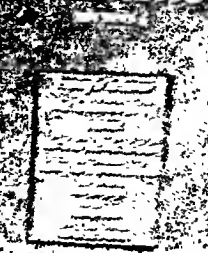
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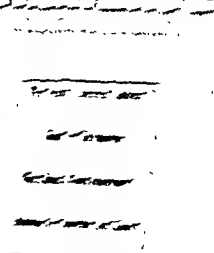


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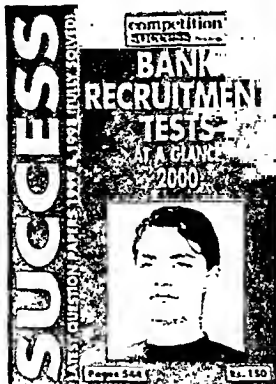
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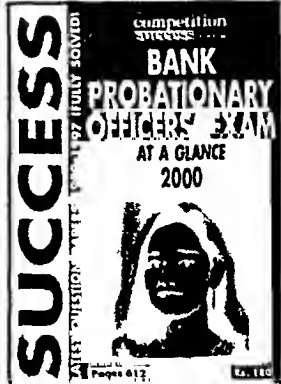
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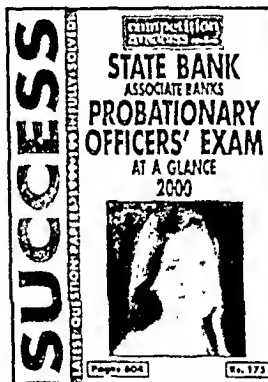
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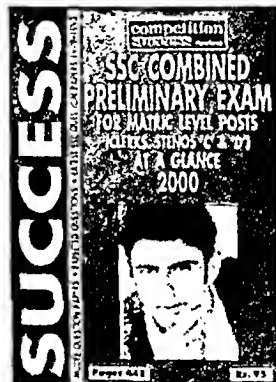
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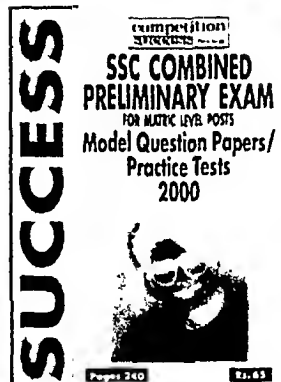
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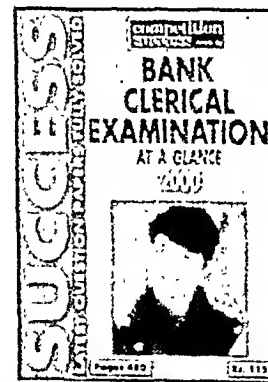
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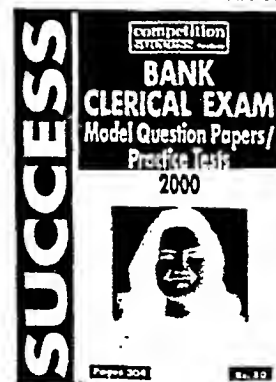
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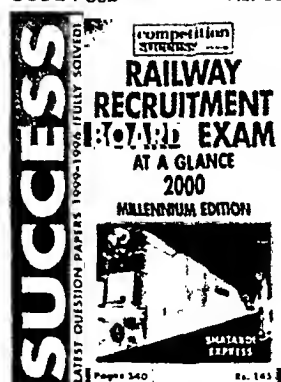
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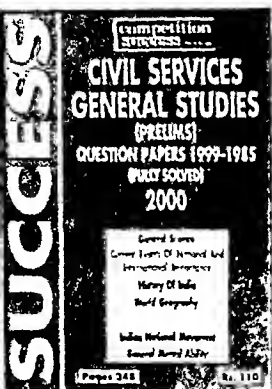
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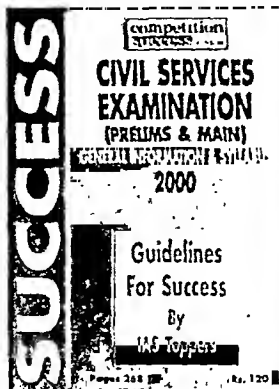
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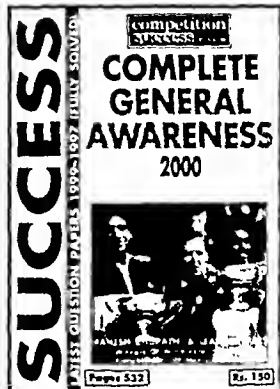
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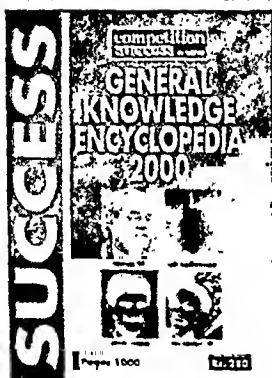
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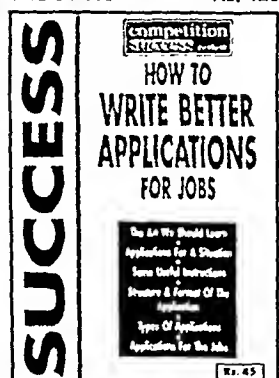
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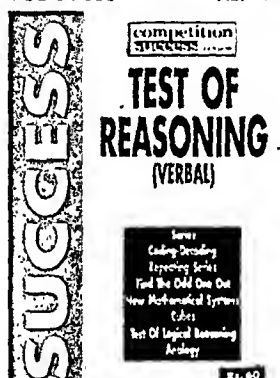
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Part IV

Exploring The Universe

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1. The Universe

The Universe or the Cosmos, as perceived today, consists of millions of galaxies. A galaxy is a huge congregation of stars which are held together by the forces of gravity. Most of the galaxies appear to be scattered in the space in a random manner, but there are many galaxies which remain clustered into groups. Our own galaxy, called the *Milky Way* or *Akash Ganga*, which appears as a river of bright light flowing through the sky, belongs to a cluster of some 24 galaxies called the 'local group'. The Milky Way is made up of over a hundred billion sparkling stars, which, though quite distant from each other, seem from the Earth as having been placed close together. The two other nearest galaxies are the Large Magellanic Cloud and the Small Magellanic Cloud, named after Magellan, who discovered them.

The universe is infinite, both in time and space. The human perception of the universe has, however, been different at different times over the long span of history of civilisation. The innate human inquisitiveness and tireless pursuit of knowledge have brought about revolutionary changes about our ideas of the universe. The Moon and the stars are no longer looked upon as heavenly bodies or the abodes of gods. Solar and lunar eclipses are no more dreaded as foretellers of natural calamities. Man's conquest of the Moon has now blown off many a myth of the religious testaments.

It was around 6th century BC that men started enquiring into the mysteries of the universe in an endeavour to rationally analyse the earthly and the heavenly phenomena. They posed to themselves several questions. What is the universe? Why do things change? Why do things move? What is life? and so on. These questions were of far-reaching significance to the development of modern science.

Ancient Greek astronomers and mathematicians came up with the view that the Earth was a perfect motionless sphere, surrounded by eight other crystalline spheres. The Sun, the Moon, and the five known planets, viz., Mercury, Venus, Mars, Saturn and Jupiter, revolved around the Earth on seven inner spheres. The stars were permanently fixed to the outer sphere that marked the edge of the Universe.

Ptolemy, a second century Greco-Egyptian astronomer, synthesised the various data gathered

by the early Greek astronomers and in his book, *Almagest*, presented his system of astronomy based on a geocentric (Earth-centred) universe. He maintained that the Earth was the centre of the universe, and the Sun and other heavenly bodies revolved around the Earth. This view of the universe remained firmly entrenched in the minds of the people right up to the middle of the 16th century. Most men in the Middle Ages strongly adhered to the Ptolemaic system as they felt that they did, indeed, live in a physically limited, rigidly structured universe centred around a motionless Earth. The Greeks had also estimated the visible universe to be about 125 million miles in diameter.

The generally accepted view of Geocentric Universe received its first real jolt with the publication of Copernicus' monumental work, *De Revolutionibus Orbium Coelestium* (On the Revolution of Celestial Bodies). The main points of the Copernican system are: (i) the Sun and the stars are motionless; (ii) the Sun lies at the centre of the universe and the stars at its circumference; (iii) the Earth rotates on its axis taking 24 hours to complete one rotation; and (iv) the Earth and the planets revolve around the Sun; and the Moon revolves around the Earth.

This system of Universe, as propounded by Copernicus, was more consistent than that of Ptolemy. But its major flaw was that while it changed the centre of the universe from the Earth to the Sun, it did not enlarge the limits of the universe, as the universe still remained equated with the Solar System.

To be punished for telling the truth was not uncommon in the 16th century, and those who dared to do so, had to face the wrath of the Church. Indeed, Galileo had to pay the penalty for telling the truth that the Earth did revolve around the Sun. With his newly-invented telescope, Galileo demonstrated the validity of the Copernican system through his studies of the phases of the Venus and the moons of Jupiter. He discovered many new stars and proved that sensory appearances could be deceptive and that it is our own limitations of perception and reason that place boundaries around the Universe.

Isaac Newton (1642-1727) demonstrated that forces of gravitation linked all material bodies in an immense universe and showed that these bodies moved in accordance with strict

mathematical laws. God was still the Creator, but he exercised a thorough mastery over mathematics and engineering.

The perception of the Universe was further widened in the 19th century when the British astronomer, Herschel, came out with his observation that the Universe was not limited to the Solar System, but is much vaster than that. The Solar System, according to Herschel, was only a small part of a much bigger star system, called the Galaxy. The Galaxy consisted of millions of stars scattered in the sky in a unique pattern of a band of light called the Milky Way.

The vision of universe got further expanded in the 20th century when, in 1925, an American astronomer, Hubble, made the contention that apart

from the Milky Way and the two other known galaxies, viz., the Large Magellanic Cloud and the Small Magellanic Cloud, there were other galaxies in the universe whose number ran into millions, each galaxy containing billions of stars. And each star is like our Sun, the centre of the Solar System.

Thus, gone are the days of a finite two-sphere geocentric system of Universe in which Earth occupied the key position. The Earth is just a planet of the Solar System and there are millions or billions of such systems existing in the skies, some of which have been discovered, while many others remain unobserved. Efforts are continuing to unfold the mysteries of the universe, several new galaxies have been discovered, but many million others remain undetected so far.

2. Space and Outer Space

The term *space* is used to denote the entire universe, i.e., the Earth and its atmosphere, the Moon, the Sun and the rest of the Solar System with its other planets and their satellites, and all the stars and galaxies spread over the infinite skies. *Outer space* refers to the entire space except the Earth and its atmosphere. The outer space begins where the Earth's atmosphere ends, and it extends in all directions from above the atmosphere of the Earth.

Since the Universe is infinite and so is the outer space, our conventional units of measurement do not suit to measure the astronomical distances, such as distances between the Earth and the Sun, the Moon or other planets or distances

between other heavenly bodies. Therefore, different units of measurement, such as the *light year* and the *astronomical unit*, have been evolved to measure distances in the space.

Light travels in vacuum at a speed of 186,282 miles (299,792.5 km) per second. The distance thus travelled by light in one year is called the *light year* which equals about 588 million million miles.

An *astronomical unit* is equal to the mean distance between the Sun and the Earth, which is 92,857,000 miles or 149,597,900 km. In other words, one light year has about 60,000 astronomical units. The astronomical unit is now used to measure the distances in the Solar System.

3. Members of the Space Family

Sun is a shining spherical heavenly body around which the planets rotate. It is one of some 10,000,000 stars which constitute our galaxy. Its average distance from the Earth is 149,597,900 km, equatorial diameter 1,392,520 km, mass 2×10^{33} tons and its average density 1.4 grams per cc.

Planets revolve round the Sun. They are not self-luminous but shine by radiating the light received from the Sun. Their orbits are elliptical. Their sizes, speeds and distances from the Sun are dissimilar. There are nine known planets. They are: (i) Mercury, (ii) Venus, (iii) Earth, (iv) Mars, (v) Jupiter, (vi) Saturn, (vii) Uranus, (viii) Neptune, and (ix) Pluto. Pluto is farthest from the Sun and Mercury nearest.

Satellites are secondary bodies that revolve around the planets as planets revolve around the Sun. A satellite is said to have been formed of the matter whirled off from a planet when still in molten state. Except Venus and Mercury, all the other planets have satellites. Moon is the Earth's satellite.

Asteroids are minor planets whose orbits lie between Jupiter and Mars. These are said to be the fragments of a larger planet disrupted long ago. More than 1,400 have been named. Ceres, the first to be discovered is the largest asteroid having a diameter of 670 km. Most of them are less than 80 km in diameter. Many thousands of asteroids are believed to exist.

Meteors are small bodies coming from interplanetary space. They become luminous by friction

on entering the Earth's atmosphere and are popularly called *shooting stars*.

Meteorites are the larger meteors that reach the Earth and become meteorites. All meteorites were meteors when in flight.

Stars are suns or self-luminous bodies, situated at enormous distances from the solar system. Some of the stars are so distant that it takes million years for their light to reach us. The distances of stars are expressed in light years. There are millions of stars in the universe.

There are four kinds of stars: (1) Fixed Stars; (2) Binary (double) Stars; (3) Temporary Stars (new stars); and (4) Variable Stars.

Fixed Stars are stars which do not appear to alter their relative positions in the sky. These are also called *dog stars*.

Binary Stars are groups of two stars revolving round a common centre under mutual gravitational attraction.

Temporary Stars are those which suddenly flare up to greatly increased brightness and fade away after a short time. They are also called *nova*.

Variable Stars are stars the brightness of which varies from time to time.

Red Giants are stars which have consumed about 10 per cent of their hydrogen on account of which they appear reddish. Red giants consume their hydrogen at an increasing rate and eventually contract to become *white dwarfs*.

Comet is a luminous celestial body which moves about the solar system in elliptical or hyperbolic orbits. Comets are usually accompanied by a long shining tail. Hyperbolic comets are seen only once and they do not reappear. Elliptical comets are periodic and their recurrence can be calculated, as in the case of Halley's comet.

Pulsars are highly compact stellar objects, distinct from the stars one sees in the night sky, rotating rapidly and emitting electromagnetic radiation in pulses much in the manner of a lighthouse flashing light. Pulsars are thought to be rapidly spinning neutron stars, in which matter is in the form of 'degenerate' neutron liquid with densities reaching values of 100 million million gm per cc. Astronomers expect the newly-born neutron stars to be pulsars.

SHORT-ANSWERED QUESTIONS

Q. What are Supernovae?

A. Supernovae, which are rare occurrences in the observable parts of our galaxy, are violent explosions of massive stars where all but the inner core of the star is blown off into interstellar space.

A supernova produces, in a few days, as much energy as the Sun would radiate in 1,000 million years. It leaves behind as cinder, dense compact objects such as black holes or neutron stars depending upon the mass of the core.

The most recently discovered Supernova was sighted on February 23, 1987. It lies in the Large Magellanic Cloud and is about 1,70,000 light years distant.

Q. What is Nebulae?

A. The clouds of rarified gas, which exist between stars, glow due to the radiation of the light of the stars. The radiated clouds of rarified gas are called Nebulae. Their visibility is hazy and faint.

Q. What is the difference between a planet and a star?

A. Stars are self-luminous celestial bodies and they have a system of their own. Planets, on the other hand, are bodies which revolve around a star and shine by the reflected light of the stars. For example, Sun is a star having a system and luminosity of its own. Earth is a planet and it is lighted by the reflected rays of the Sun.

Q. What do you understand by constellation?

A. The constellation is a group of fixed stars associated with an imaginary figure, for example, a bear. A bear is the group of seven stars in the north. Orion is another group in the shape of man with a gun. The scorpio group of stars resembles the shape of a scorpion.

Q. Why do the stars twinkle?

A. The light from the stars travels through different layers of space of varying densities. Therefore, the light rays deviate from its original path. Further, these layers are not stationary but keep on moving. This leads to the twinkling effect of the stars.

Q. Write a short note on Quasars.

A. Quasars are also called quasi-stellar radio sources. These are among the large number of celestial objects, from four to ten billion light years distant, that are powerful sources of radio energy. Some of the quasars have been observed with optical telescopes as they emit light.

Q. The tail of a comet gets shorter as it recedes from the Sun. Why?

A. The tail of a comet is composed of gas and fine dust particles. It develops as the comet approaches the Sun and is likely to become conspicuous if the perihelion is close to the Sun. The tail generally points directly away from the Sun because it is repelled by a force which is greater than that of the Sun's attraction. The

repulsive force is generally accounted for due to the force of Sun's radiation. As the comet recedes from the Sun, its tail gets shorter due to the decrease in the repulsive force of Sun's radiations because of the falling temperature with increasing distance from the Sun.

Q. Why do the stars in the sky have different colours?

A. Stars in the sky have different colours — yellow, blue, white, red, green, purple, etc. The colour of any star largely depends upon its temperature. The red stars are cooler than the white ones and the white stars are cooler than those that have a bluish white or blue colours. It is just like the heating process that we observe in our daily life. When we heat a piece of iron, it becomes red hot; with further heating it changes into yellow, then whitish and further bluish as we go on heating it. The same is the case with the stars in the sky. For example, Sirius, the dog star in the constellation of Canis Major, is a white star with a temperature of almost $20,000^{\circ}\text{F}$. Capella, the bright star in the constellation of Auriga, is a yellow star having a temperature of around $11,000^{\circ}\text{F}$. Orange stars like Arcturus and Aldebaran have temperatures around $7,000^{\circ}\text{F}$.

Q. Which is the brightest star that we see in the sky?

A. Apart from the Sun, the brightest star that we see in the sky is Sirius, the dog star in the constellation of Canis Major or the Big Dog. It is about nine light years away from the Earth and has a temperature of $20,000^{\circ}\text{F}$. In the Greek and Roman mythology, the giant Orion was a great hunter, and Sirius was his faithful dog. This brilliant dog star is aptly named Sirius which comes from the Greek word meaning scorching

Q. Why does the sky appear to be blue?

A. The sunlight while travelling through the atmosphere is broken up and scattered by the tiny particles of air, water vapour and dust and makes the sky look blue. As we know, sunlight is made up of seven colours and it travels in waves. Light of different colours moves in waves of different lengths. The waves of blue are much shorter than the waves of red or orange light. As the sunlight travels through the atmosphere, the waves of blue light are just of the right size (shorter waves) to be broken and scattered by the air, water vapour and dust particles, and then they are spread in all directions, while the waves of red and orange lights pass right through the atmosphere and reach our eyes. This scattering of blue light makes the sky appear blue. However, in the morning and in the evenings, i.e., the time of sunrise or sunset, the light from the Sun passes through greater layers of atmosphere that scatter the orange and the red light waves as well. Thus the sky looks a red or orange colour at those times.

Q. What would be the colour of the sky if there were no atmosphere?

A. Colours of the sky, blue in the daytime and orange or red at sunrise and sunset, are all made to appear so by the scattering of the sunlight by air, water and dust particles as it travels through the atmosphere. If there were no atmosphere, there would be no such breaking up and scattering of sunlight and thus the sky would always appear to be deep black in colour. However, there would be still some colours dotting the black skies as the stars that are red, blue, yellow, purple, etc. In colours would still keep the same colour as these colours are not largely affected by the atmosphere of the Earth.

4. The Solar System

Our Solar System comprises the Sun, the planets and their moons. It also consists of several thousand minor planets called asteroids or planetoids and a large number of comets. In order of their distance from the Sun, the planets of the solar system are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and Pluto. Mercury and Venus are nearer to the Sun than the Earth. It is possible to see their motions around the Sun from the Earth. Both these planets require much less time to pass between the Earth and the Sun than around the far side

of the Sun. The temperature found on each planet depends upon its distance from the Sun. The closer the planet to the Sun, the higher is its temperature.

It is believed that the universe came into existence some 15 billion years ago. At that time it comprised hydrogen and a small amount of helium only. There were neither planets nor stars. The Sun appears to have been formed 4.6 billion years ago. Many stars appeared before the Sun was formed and many more followed the Sun's formation. This process of formation of stars

continues. Being combustible, stars have a limited life.

Sun: Sun is considered to be the parent and the largest member of the solar system. Every member of the solar system revolves round the Sun. The Sun is made up of extremely hot gases. It gives out huge flames. It is the only source of heat and light for the entire solar system. The average distance of the Sun from the Earth is 149,597,900 km and its equatorial diameter is 1,392,520 km and its surface is approximately 12,000 times that of the Earth. Its rotation period is 25 days 9 hours and 7 minutes. Sun's rays travel at a tremendous speed of about 300,000 kilometres per second and take eight minutes to reach the Earth.

Mercury: Mercury is the closest planet to the Sun. It is the second smallest of the nine planets orbiting the Sun at an average distance of 57,909,100 km. Its diameter is 4,878 km and its period of revolution is about 88 days. The planet rotates on its axis over a period of 58 days, 15 hours, 30 minutes and 34 seconds. Being nearest to the Sun, Mercury receives the greatest amount of heat from it. Mercury has no moons, but it does have a trace of atmosphere and a weak magnetic field.

Venus: Venus is the brightest of all the planets and is slightly smaller than the Earth. It is often visible in the mornings and evenings, when it is frequently referred to as the Morning Star or the Evening Star. Its diameter is 12,102 km. It is at a distance of 108,208,900 km from the Sun. It rotates very slowly in a clockwise direction, i.e., contrary to the spin of other planets, and this rotational period is 243 days and 14 minutes. It revolves round the Sun in about 225 days.

Earth: Earth is the third nearest planet to the Sun and is the fifth largest planet. It has an equatorial diameter of 12,756 km and a polar diameter of 12,714 km. The Earth is at a distance of 149,597,900 km from the Sun and orbits round the Sun at a speed of 107,220 km per hour, making one revolution in 365 days, 5 hours, 48 minutes and 45.51 seconds. It completes one rotation on its axis every 23 hours, 56 minutes and 4.091 seconds.

The Earth is a unique planet. It is a bit pear-shaped rather than a true sphere. The Earth is considered a solid, rigid mass with a dense core magnetic, probably metallic material. It is the only planet containing ample water and air around. The temperature on the Earth is also suitable for human life. The Earth has only one satellite, the Moon.

Mars: Mars is the first planet beyond earth. Its equatorial diameter is 6,794 km and polar diameter 6,752 km. It is 227,940,500 km away from the Sun. Moving at a speed of about 25 km per second, Mars completes one revolution around the Sun in about 687 days. It rotates on its axis in 24 hours, 37 minutes and 22.663 seconds, i.e., almost the same period of time as taken by the Earth. Mars is named after the Roman god of war, because when seen from Earth its distinct red colour reminded the ancient people of blood. Mars has two satellites.

Jupiter: With an equatorial diameter of 142,880 km and a polar diameter of 133,540 km Jupiter is the largest planet of our solar system. Its outer layers are gaseous, composed of hydrogen and hydrogen compounds. Jupiter's rate of rotation is rapid and it completes one rotation in 9 hours, 50 minutes and 30 seconds. The distance between Jupiter and Sun is 778,333,000 km. Jupiter completes one revolution around the Sun in 4,332.62 days (about 12 years). Jupiter has 16 satellites. Named after the king of the Roman gods, Jupiter rotates so fast that it is greatly flattened at the poles.

Saturn: Second in size to Jupiter, Saturn is about 1,426,978,000 km away from the Sun. Its equatorial diameter is 120,500 km and polar diameter 106,900 km. It takes 10 hours and 14 minutes to complete one rotation. It revolves round the Sun in 10,759.06 days (about 30 years). Saturn is less dense but colder than Jupiter. Its specific gravity is less than that of water. It is now believed that Saturn has at least 22 satellites, some sharing orbits. Last of the planets visible to the naked eye, Saturn looks like a bright star. The rings can be seen with a small telescope. Saturn was first discovered by Galileo.

Uranus: Uranus is the first planet discovered in modern times by Sir William Herschel in 1781. It is the seventh planet from the Sun, twice as far out as Saturn. Its equatorial diameter is 51,400 km and polar diameter 50,300 km, i.e., nearly four times that of Earth. It is at a distance of 2,870,991,000 km from the Sun. It rotates on its axis in 16 hours and 10 minutes and revolves round the Sun in 30,707.79 days (about 84 years). The satellite system of Uranus consists of at least 15 moons. Its axis is tilted at 97 degrees, so it goes around the Sun nearly lying on its side. Due to Uranus' unusual inclination, the polar regions receive more sunlight during a Uranus year of 84 Earth years. Ninety-eight per cent of the upper atmosphere is composed of hydrogen and helium. The remaining two per cent is methane.

ELEMENT OF THE PLANETARY ORBITS

Planet	Mean distance from Sun (km)	Perihelion distance (km)	Aphelion distance (km)	Sidereal period (days)
Mercury	57,909,100	46,001,000	69,817,000	87.97
Venus	108,208,900	107,475,000	108,943,000	224.70
Earth	149,597,900	147,097,000	152,099,000	365.26
Mars	227,940,500	206,656,000	249,226,000	686.98
Jupiter	778,333,000	740,750,000	815,920,000	4,332.62
Saturn	1,426,978,000	1,347,020,000	1,506,940,000	10,759.06
Uranus	2,870,991,000	2,738,560,000	3,003,400,000	30,707.79
Neptune	4,497,070,000	4,451,880,000	4,542,270,000	60,199.63
Pluto	5,913,510,000	4,444,400,000	7,382,600,000	90,777.61

PARAMETERS OF THE SUN AND THE PLANETS

Sun or Planet	Diameter			Rotation Period			
	Equatorial (km)		Polar (km)	d	h	m	s
Sun		1,392,520		25	09	07	
Mercury		4,878		58	15	30	34
Venus		12,102		*243	00	14	
Earth	12,756		12,714		23	56	04
Mars	6,794		6,752		24	37	23
Jupiter	142,880		133,540		9	50	30
Saturn	120,500		106,900		10	14	
Uranus	51,400		50,300		16	10	
Neptune	48,600		47,500		18	26	
Pluto		3,000		6	09	18	

* Retrograde direction, i.e., contrary to that of the general motion of similar bodies.

Neptune: Neptune is the eighth planet from the Sun. It has an equatorial diameter of 48,600 km and a polar diameter of 47,500 km. It is at a distance of 4,497,070,000 km away from the Sun and takes 60,199.63 days (nearly 165 years) to make one revolution of the Sun. The period of its rotation is 18 hours and 26 minutes. Neptune has eight satellites.

Pluto: Pluto is the smallest and coldest planet of our solar system because it is remotest from the Sun. It has a diameter of 3,000 km and rotates on its axis in 6 days, 9 hours and 18 minutes. Its mean distance from the Sun is 5,913,510,000 km and its period of revolution is 248.54 years. Although Pluto's average distance is more than that of Neptune, its orbit is so eccentric that its minimum distance is less than the current distance of Neptune. It is named after the Roman god of the underworld. It has one satellite.

MOON — EARTH'S SATELLITE

Moon is the only natural satellite of Earth. It is also the nearest neighbour of Earth at a mean distance of 384,400 km centre to centre, 376,284 km surface to surface. Its diameter is 3,475 km and average orbital speed is 3,680 km per hour. Earth is being orbited by the Moon. Only 59 per cent of the Moon's surface is directly visible from Earth. The period of rotation of Moon is equal to its period of revolution around the Earth. This period is 27 days, 7 hours, 43 minutes and 11.47 seconds.

EARTH'S FARTHEST NEIGHBOUR SPOTTED

The Earth's farthest neighbour, which is also the oldest known so far, is a quasar—belonging to a class of astronomical objects which appear starlike—and is about 14 billion light years of

82,000,000,000,000,000,000,000 miles away, American scientists say.

The quasar, or quasi-stellar object, was seen through a 200-inch Hale telescope at the Palomar Observatory, near San Diego. It is located in the constellation Ursa Major, just below the Big Dipper's bowl.

The discovery was reported by the *Astronomical Journal*.

Quasars are among the most radiant objects in the universe—the brightest of it emitting more light than 1,000 galaxies of 100 billion stars each.

SHORT ANSWERED QUESTIONS

Q. What are Sun's spots?

A. Sun's spots are regions in Sun's photosphere and are visible on Earth as irregular dark patches scattered on either side of Sun's equator. Those regions appear to emit strong magnetic field which disturbs wireless communication. Such disturbances cause magnetic storms on earth.

Q. Explain the production of halos round the Moon or the Sun.

A. The luminous ring which is seen round the Moon or the Sun on occasions is called the halo. It is caused by the refraction of light by ice crystals present in the atmosphere.

Q. How many planets are there in the Solar System? Give their names.

A. There are nine planets known to exist in the solar system. In the order of their nearness to Sun, they are: (1) Mercury, (2) Venus, (3) Earth, (4) Mars, (5) Jupiter, (6) Saturn, (7) Uranus, (8) Neptune and (9) Pluto.

Q. Name the largest, smallest and brightest planets in the Solar System.

A. Largest Planet: Jupiter with an equatorial diameter of 142,880 km is the largest planet.

Smallest Planet: The smallest known planet is Pluto with a diameter of 3,000 km.

Brightest Planet: Venus is the brightest planet.

Q. Which planet is nearest to the Earth?

A. Venus is the planet nearest to the Earth.

Q. Which are the hottest and the coldest planets?

A. Venus, which has a surface temperature of 462°C (864°F) is the hottest planet.

Pluto, with an estimated surface temperature of -214°C (-353°F) is the coldest planet in the Solar System.

Q. Which is the fastest planet?

A. Mercury, which orbits the Sun at an average distance of 57,909,200 km and has a period of revolution of 87.97 days is the fastest planet with

an average speed of 172,248 km per hour in the orbit.

Q. Which planet is farthest from the Sun?

A. For most of the time, Pluto is farthest from the Sun. But its orbiting path being highly elliptical, when it comes closest to the Sun 4.44 billion km away, Neptune becomes the farthest planet 4.45 billion km away. However, the aphelion distance of Pluto is 7.38 billion km from the Sun compared to 4.54 billion km of Neptune. Hence, Pluto is the farthest planet from the Sun or the outermost planet of the solar system.

Q. Why does the same side of the moon face the Earth?

A. The Moon rotates on its axis once in $27\frac{1}{3}$ days and it also takes the same time, i.e., $27\frac{1}{3}$ days, to revolve around the Earth. Hence, only one side of the Moon remains visible on the Earth throughout.

Q. What causes a lunar eclipse? Why does the lunar eclipse occur only at full moon but not at every full moon?

A. The lunar eclipse is caused when the Earth comes between the Sun and the Moon and casts its shadow on the Moon. The lunar eclipse occurs during the time when the Moon is in apposition to the Sun in relation to the Earth and this comes about only on a full moon day. The lunar eclipse does not occur on every full moon day since the Moon does not come in apposition to the Sun at every full Moon.

Q. Explain the difference between a solar and lunar eclipse.

A. Total or partial obscuration of the Sun's light when viewed from Earth is called the *solar eclipse*. During a solar eclipse, the Moon takes up such a position between the Earth and the Sun that it partially or completely obscures the light of the Sun. It occurs on new Moon day when the Moon is in conjunction with the Sun, but not at every new moon because of the inclination of the orbit of the Moon. The total or partial obscuration of the Moon's light when viewed from the Earth is called *lunar eclipse*. A lunar eclipse occurs when the moon is in apposition to the Sun in relation to Earth and it happens on a full Moon day.

Q. Is there any other world like ours?

A. There are eight other worlds (planets) in the solar system which are somewhat like our Earth, though the Earth is probably the only one on which living creatures exist. For many years, astronomers have been speculating about life on Mars, but since Mars has so little of atmosphere and no water, it is believed that some kind of life does not exist on Mars. However, the photos flash

the US Space craft to Mars, indicate that the planet had probably once water and life on it.

It is also believed that there may be other families of planets like the one found in our Solar System. Since the Sun, which is just like any other ordinary star, has planets revolving around it, other stars too may have planet families. However, it still remains a guess and the scientists have not been able to prove it as yet.

Q. How hot is the Sun?

A. Sun is a mass of burning gases. The temperature at the surface of the Sun is about 11,000 degrees Fahrenheit, while its interior is estimated to 40,000,000 degrees Fahrenheit. At this temperature, even atoms break down. Some of this energy caused by continuous atomic explosions escapes in the form of heat and light and is transmitted through radiation down the atmosphere to the Earth. Though the Sun rays travel millions of kilometres before reaching the Earth, they can cause pretty severe sunburns to our plant and animal life.

Q. How does the heat from the Sun reach us?

A. Heat from the Sun reaches us by means of radiation through millions of kilometres of empty space. Radiant energy (heat) is transmitted in short waves which are not absorbed by the atmosphere. Hence, it passes on to the Earth, without heating the atmosphere. But when these waves strike against Earth, they are absorbed by the Earth which thus becomes warm. The Earth, in turn, radiates longer waves which are absorbed by the lower

layers of atmosphere. The lower atmosphere thus becomes warm during bright sunshine while at the higher altitudes it remains cool as the radiant waves from the earth lose much of their heat before passing on to the upper layers of atmosphere.

Q. Is Earth nearer to the Sun in winter or summer?

A. In its yearly journey around the Sun, the Earth comes nearest to the Sun in early December (147,097,000 km). On the other hand, in July it is the farthest from the Sun (152,099,000 km). In other words, Earth is nearest to the Sun in winter and farthest from it in summer in the northern hemisphere. This seems to be surprising that the cold winter weather comes when the Earth as a whole is closest to the Sun, and the hot summer season comes when it is farthest away. But for those who live in the southern hemisphere, it is all quite plausible and natural as their cold weather comes in July and the hot season in December.

Now when Earth is closest to the Sun, why there is winter in the northern hemisphere? This is explained by the fact that when the Earth is closest to the Sun, the northern hemisphere is tilted away from it. Therefore, this part of the Earth gets the solar rays less directly. These sloping rays have to pierce through more of Earth's blanket of atmosphere and thus lose much of their heat. On the other hand, in July, when the Earth is farthest away from the Sun, the northern hemisphere is tilted towards the Sun. Hence, the Sun's rays strike this part of the Earth more directly and cause hot weather.

5. Space Exploration

Space exploration began with the launching of Russia's Sputnik-1 into space on October 4, 1957. It was, indeed, the heralding of a new era in man's quest to know more about the universe and its components, and has thus been called the beginning of the space age. Sputnik-2 followed a month later and carried with it a dog, Laika. The study of this animal's physiology, while both in space and after its return to Earth, showed that human beings too could survive in space.

The USA entered the space arena on January 31, 1958 with the launching of the Explorer-1. This satellite is credited with making the important discovery of the Van Allen radiation belts around the Earth, where electrons and protons from the Sun are trapped by earth's magnetic field. Exploration satellites were also sent to probe the

Moon as well as planets which, on their way, detected solar winds of sub-atomic particles emanating from the Sun.

In October 1959, the Russian satellite Luna-3 sent pictures of the far side of the Moon. The American satellite Mariner-2 flew past Venus in 1962. The data and the pictures transmitted by the satellite confirmed the views of the scientists that Venus had a high temperature and that it rotated in the reverse direction. Mariner-4 sent back pictures of Mars in 1965 revealing that there were huge craters on this planet. These scientific probes were extended and improved upon in the coming years. Remote controlled satellites were landed on Moon, Venus and Mars. The boundaries of exploration were further extended to close ranges of the Sun, Jupiter and beyond.

MANNED SPACE PROBES

The first manned space probe was sent by the erstwhile USSR (now CIS) in April 1961 when it launched cosmonaut Yuri Gagarin, who orbited the earth on April 12, 1961. The first woman cosmonaut, Valentina Tereshkova of the USSR (now CIS), flew into space in June 1963 and stayed for about three days in the orbit.

U.S. MANNED SPACE FLIGHT PROGRAMMES

Mercury: Project Mercury, initiated in 1958 and completed in 1963, was the United States' first man-in-space programme. It was designed to further knowledge about man's capabilities in space.

The Americans overtook the Russians in space race with the two-man *Gemini* launches in 1965, which marked a tremendous improvement upon their earlier modest endeavours in smaller *Mercury* spacecraft. The *Gemini* crew practised space walks, docking procedures and rendezvous manoeuvres, thus preparing for the eventual landing of man on the moon.

Gemini: The project was named *Gemini* for the third constellation of the Zodiac and its twin stars, Castor and Pollux. There were ten manned flights in the *Gemini* programme. The aim of the project was to determine the effects of prolonged space flights on man—two weeks or longer—the time it takes to reach the Moon and return. "Walks in space" provided invaluable information for astronauts' later walks on the Moon. The *Gemini* spacecraft, twice as large as the *Mercury* capsule, accommodated two astronauts. The capsule differed from the *Mercury* spacecraft in that it had hatches above the capsules so that the astronauts could leave the spacecraft and perform spacewalks or extra-vehicular activities.

Apollo: American *Apollo* flights were a further improvement on their earlier *Gemini* spacecraft, as the *Apollo* was relatively more comfortable, had a larger inside space for the crew to move about and could carry more of instruments and load. The programme was launched in the United States' efforts to land a man on the Moon and return him safely to Earth.

LANDING ON THE MOON

History was created on July 21, 1969, when America's mission to the moon successfully landed Neil Armstrong and Edwin Aldrin on the Moon's surface from *Apollo-11* with their four-legged *Lunar Module*. Since then a total of 12 American

astronauts have worked on the moon in the *Apollo* missions, bringing back 380 kg of rocks and soil for detailed scientific investigations. Six *Apollo* flights followed, ending with *Apollo 17* in December 1972. Though currently no more Moon trips are envisaged, it is more likely that sooner or later, some sort of small scientific laboratories may be established on the Moon for the scientists and astronomers to have a close look at the universe as also for mining moon's crust to obtain useful minerals.

Skylab: *Skylab*, America's first Earth-orbiting space station, was designed to demonstrate that men can work and live in space for prolonged periods without ill effects. Originally, the spent third stage of a Saturn 5 moon rocket, *Skylab* measured 118 feet from stem to stem and carried the most varied assortment of experimental equipment ever assembled in a single spacecraft. Three three-man crews visited the space stations, spending more than 740 hours observing the Sun and bringing home more than 175,000 solar pictures. These were the first records of solar activity above Earth's obscuring atmosphere. *Skylab* also evaluated systems designed to gather information on Earth's resources and environmental conditions. *Skylab's* biomedical findings indicated that man adapts well to space for at least a period of three months, provided he has a proper diet and adequately programmed exercise, sleep, work and recreation periods. *Skylab* orbited Earth at a distance of about 300 miles (480 km). Five years after the last *Skylab* mission, the 77-ton space station's orbit began to deteriorate faster than expected owing to unexpectedly high sunspot activity. On July 11, 1979, the parts of the *Skylab* that did not burn up in the atmosphere came crashing down on parts of Australia and the Indian Ocean. No one was hurt.

SOVIET MANNED SPACE FLIGHT PROGRAMMES

Vostok: The Soviet's first manned capsule, roughly spherical, was used to place the first six cosmonauts in Earth orbit during 1961-65.

Voskhod: Adaptation of the *Vostok* capsule to accommodate two and three cosmonauts, *Voskhod-1* orbited three persons, and *Voskhod-2* orbited two persons performing the world's first manned extra-vehicle activity.

Soyuz: *Soyuz* is Russian for "union". It is a late-model manned spacecraft with provisions for three cosmonauts and a "working compartment" accessible through a hatch. Since 1973, all *Soyuz* spacecraft have carried two cosmonauts. *Soyuz 19*

launched on July 15, 1975. docked with the American *Apollo* spacecraft.

Salyut: It is an Earth-orbiting space station intended for prolonged occupancy and re-visitation by cosmonauts. *Salyut* is usually launched by Soviet Proton rockets. *Salyut 1* was launched on April 19, 1971. *Salyut 2* launched on April 3, 1973 malfunctioned in orbit and was never occupied. *Salyut 3* was launched on June 25, 1974. *Salyut 4* on December 26, 1974, *Salyut 5* on June 22, 1976, *Salyut 6* on September 20, 1977, and *Salyut 7* on April 19, 1982. The Russian counterpart of *Skytab*, *Salyut 7*, placed in the near-Earth orbit, was manned by a number of crews from time to time, which include an Indian and a French cosmonaut. The first Indian in space, Squadron Leader (later Wing Commander) Rakesh Sharma was launched on April 3, 1984 aboard *Soyuz-11T* spacecraft from the Baikonour cosmodrome, which docked with the space station *Salyut 7* where Rakesh Sharma stayed for seven days and returned to earth on April 11, 1984. A record breaking Russian endurance flight was set (February 8, 1984-October 2, 1985) when Soviet astronauts spent 237 days in orbit aboard *Salyut 7*. *Salyut 7* re-entered the atmosphere and crashed into the Atlantic Ocean on February 6, 1991.

Mir: The former Soviet Union's space station, *Mir* was launched into orbit on February 20, 1986. Since then, three space endurance records have been set in the *Mir*. On December 29, 1987, Col. Yuri Romanenko set a single-mission record of 326.5 days in space. On December 21, 1989, Col. Vladimir Titov and Musa Manarov returned to Earth after spending 366 days aboard the orbiting space station. Russian cosmonaut Valeriy Polyakov, a 51-years-old physician, returned to the Earth on March 22, 1995 after setting a new record for the longest human flight in space—427 days. The American space shuttle *Discovery* docked with *Mir* on June 29, 1995 and they both became a huge single spacecraft high over the earth in an extraordinary sharing of technical skills between the two former rivals. It was only the second time that ships from two countries joined up in space, the first was in July 1975 between the American *Apollo* capsule and the Soviet *Soyuz*. Meanwhile, the US space shuttle *Atlantis* docked with the Russia's *Mir* station (September 18, 1996), to pickup Mr. Lucid after a record-breaking six months in orbit.

Subsequently, *Mir* Space Station developed technical snags & power loss which were, however, rectified. Meanwhile, it has been decided to sink

the ageing *Mir* in the Pacific latest by March 2000. (The current crew of *Mir* returned on August 28, 1999)

SPACE SHUTTLE

The space shuttle is a manned space transportation system developed by NASA to reduce the cost of using space for commercial, scientific and defence needs. In effect, the shuttle is a manned rocket which, after depositing its payload in space, can be flown back to earth like conventional aeroplane and be available for re-use. Because of its versatility and large cargo-carrying capacity, the space shuttle can combine missions.

The first space shuttle orbiter, the *Enterprise*, was rolled out by NASA from Palmdale, California, in September 1976. The spacecraft successfully completed a series of approach and landing flight tests in 1977. The second space shuttle orbiter, *Columbia*, was launched from the Kennedy Space Centre, Florida, on April 12, 1981 and after 36 orbits of the earth landed successfully at Edwards Air Force Base in California on April 14, 1981. The event brought closer the day when space travel can become commonplace like air travel.

The space shuttle *Columbia* was sent into orbit on its second trip and returned to a safe landing at Edwards Air Force Base in California on November 14, 1981 with nearly all its mission accomplished. The 75-ton spaceship, which had its planned five-day flight cut by more than half through a faulty fuel cell, was the first manned craft to return to Earth for a second time. Indian engineers played a key role in the *Columbia* mission.

The space shuttle *Challenger*—the second ship in a fleet of four re-usable U.S. spacecrafts, viz., *Columbia*, *Challenger*, *Discovery* and *Atlantis*—tilted off the launch pad at Kennedy Space Centre in Florida on April 5, 1983 and glided safely back to Earth on April 9, 1983. It carried the world's largest operational satellite and four astronauts. In its second flight in June 1983, space shuttle *Challenger* carried five astronauts aboard, including the 32-year-old Sally K. Ride, who became the first American woman to be catapulted into outer space. Space shuttle *Challenger* was also used for carrying India's INSAT-1B on August 30, 1983 from the Cape Canaveral launch pad in Florida.

The space shuttle *Discovery*, on its 18th mission in June 1985, carried to the space a Saudi Prince and a Frenchman besides five Americans.

The *Ulysses* spacecraft was launched from the space shuttle *Discovery* on October 6, 1990. The *Discovery* also made a handshake with the Russian orbiting laboratory *Mir* in February 1995 and the two turned into a huge single spacecraft. It was a union of two old foes in space.

It was for the first time that a woman, Ms. Eileen M. Collins, a Lieutenant Colonel in the U.S. Air Force, piloted the *Discovery*.

Atlantis, the fourth member of the NASA's space fleet, was launched on October 3, 1985 and deployed two bomb-shielded fire-proof air force communication satellites in the orbit.

The American space programme, however, received a severe setback when on January 29, 1986, the space shuttle *Challenger*, on its 25th flight, exploded in the midair, just 75 seconds after its lift-off, killing all the six astronauts and a woman school teacher, Christa McAuliffe, on board. This not only upset the US space programme, but also gave an immense jolt to the space missions of other nations such as India, whose INSAT-1C was scheduled to be launched by this spacecraft.

After the initial shock and waiting for over two-and-a-half years, the USA successfully launched space shuttle *Discovery* on September 29, 1988 with a five-member crew on board. In March 1989, space shuttle *Atlantis* launched a spacecraft on voyage to Venus.

The United States' oldest space shuttle *Columbia* again rocketed away from Earth on August 8, 1989 on its first flight in three-and-a-half years, carrying five military astronauts on a secret mission to send a spy satellite into orbit, and landed safely at the Edwards Air Force base on August 13, 1989 at the end of a five-day mission. According to experts, the crew also carried out a Strategic Defence Initiative (Star Wars) experiment.

In October 1989, space shuttle *Atlantis* again thundered into orbit to launch the space mission *Galileo*, a probe mission to Jupiter.

The space shuttles have, indeed, been helpful in cutting down the cost of space missions, as they have made it possible to launch satellites through the space orbiters which are brought back and re-used a number of times. Further, they have made it possible to repair and retrieve faulty satellites.

In April 1984, the space shuttle enabled the astronauts to carry out repairs on the satellite *Solar Max*. For this, the astronauts had to perform the historic feat of getting out of the spacecraft and walk in space for 6 hours and 44 minutes. In November 1984, the shuttle succeeded in retrieving the two malfunctioning satellites, *Palpa B-2* and

Westar-6, and bringing them to Earth for repairs and re-use.

The Soviet Union entered the arena of space shuttles on November 15, 1988 with the launching of its first reusable shuttle *Buran* (Snowstorm). This space shuttle has the world's most powerful booster rocket, *Energia*. The space shuttle *Buran*, circled the Earth twice in about 200 minutes before returning to the launch site near Baikonour cosmodrome in Soviet Central Asia.

VOYAGER'S TREK TO STARS

The USA launched in 1977, *Voyager 1* and *Voyager 2*, which were designed essentially to study at close range the two giants of the Solar System, Jupiter and Saturn. Scientists took advantage of an alignment of the outer planets that happens once every 150 years or so. The study of Jupiter and Saturn was all the two spacecrafts were commissioned to do, but after *Voyager 1* flew close to Saturn and its moon Titan in November 1980, it was flung away from the planet at a deep angle into an never-ending odyssey towards interstellar space.

The American *Voyager 2* spacecraft capped a historic 12-year-tour of the four outer planets on August 25, 1989 as it skimmed 4,905 km above Neptune's blue cloudtops, its closest approach to any object in the Solar System.

As it zoomed towards the solar system's fourth largest planet, *Voyager 2* discovered two more tiny moons: a 96-km wide moon designated 1989 N5, and the even smaller 1989 N6, which is 48 km wide. The two new moons brought Neptune's total to eight, including the two moons observed from earth—*Triton* and *Nereid*—and four found previously by *Voyager*.

Voyager also found a complete ring of debris encircling Neptune, although it was at first thought to be a partial ring or ring arc. The new *Voyager* photos also showed that a ring arc orbiting farther from Neptune extended 90 per cent around the planet and almost certainly was a complete ring.

Voyager's close-up photos of Neptune's moon Triton reveal what appear to be active ice volcanoes that spew nitrogen ice particles and gas more than a kilometre high.

In August 1989, *Voyager 2* swept past Neptune and its icy volcanic moon Triton—the last planetary exploration in an incredible 12-year journey that also took the spacecraft past Jupiter, Saturn, Uranus and more than 50 moons. Now *Voyager* is speeding into the loneliest part of its trek: the *Voyager* interstellar mission. With *Voyager 1*, it

will study the sun's magnetic field, solar wind and ultraviolet light from distant stars and galaxies.

Like *Pioneers 10* and *11*, *Voyager 1*, which explored Jupiter and Saturn, *Voyager 2* will also search for the edge of the Solar System.

The *Voyagers* are expected to return information to Earth until about the year 2015 or 2020. Contact eventually will be cut off by some malfunction, by exhaustion of the probe's plutonium power generators, or when their thruster fuel runs out leaving them unable to point antennae at Earth.

Then the robot explorers will pass among the stars, each carrying a 30-cm copper record of sounds and sights from Earth in case they are found by a space-faring civilisation.

In a billion years, when drifting continents would have reshaped Earth's face and humans are extinct or changed by evolution, the *Voyager 2* spacecraft will still be cruising the stars.

PHOBOS MISSION

Of the two probe missions to Mars that the Soviets launched in July 1988, only one—*Phobos-II*—has succeeded in approaching the red planet after travelling a distance of 180 million kilometres for over six months. *Phobos-I* lost contact with ground controllers after developing trouble in its instruments and it is anybody's guess where the spacecraft may be heading for now. The Soviet space mission is a forerunner to the surface exploration of Mars by robots in 1990s hopefully to be followed by a manned return trip by 2010 AD.

The *Phobos-II* craft will orbit the planet for nearly two months after which it will approach Martian Phobos. The heavily-cratered satellite of Mars is only 21 by 27 km in size and revolves around the planet in 7.6 hours at a distance of 9,700 km.

Thought by astronomers to be a captured asteroid, Phobos probably has a chemical composition characteristic of the early solar system. The *Phobos-II* is programmed to relay any atmospheric data that the craft's remote sensors may detect to ground controller. The craft is also powered to approach the satellite at a distance of 30 to 80 km under automatic radar control, from where a small lander will hop around Phobos' low gravity surface in kangaroo-like hops.

The Americans in 1976 had succeeded in soft-landing the *Viking* spacecraft on the Martian surface. It had relayed countless colour pictures of the red planet, but had not found any signs of life.

MISSION TO JUPITER

In October 1989, the USA launched its *Galileo* space probe mission to make the first ever comprehensive study of Jupiter. The spacecraft was carried aloft by the space shuttle *Atlantis*.

Named after the Italian astronomer Galileo Galilei, who on January 7, 1610, discovered three of Jupiter's moons, and later on January discovered a fourth satellite, the *Galileo* mission is a project to orbit Jupiter and send an instrumented probe into the giant planet's atmosphere. The project will allow scientists to study—at close range and for almost two years—the largest planet in the Solar System, its satellites and massive energy field. These four "Galilean" satellites—to, Europa, Ganymede and Callisto—are major targets for the *Galileo* mission. The spacecraft will study the chemical composition and physical features of Jupiter's atmosphere and four moons besides the structure and dynamics of the Jovian magnetosphere.

Galileo spacecraft represents the peak in design sophistication and its imagery will be 20 to 1,000 times sharper than the best returned by *Voyager* in 1979.

Besides making observations on the greenhouse effect and the Antarctic ozone hole, *Galileo* will film what scientists call earth movie. In the movie the earth will appear as a thin distant crescent then will gradually fill the frame until surface objects ten feet across are visible. *Galileo* will also use a state-of-the-art instruments to map the atmosphere for methane, carbon dioxide and other gases responsible for global warming.

The facts already known to mankind reveal the interesting characteristics of Jupiter. It is a miniature version of a solar system with at least 16 satellites and a faint ring system. The planet's 88,700-mile diameter is eleven times greater than that of earth yet it rotates every 10 hours giving 28,000 miles per hour speed at the equator.

After a six-year journey, the *Galileo* spacecraft was scheduled to reach Jupiter on December 7, 1995. The spacecraft which was launched on October 18, 1989, passed Venus in February 1990, Earth in December 1990 and made one last flyby of Earth on December 8, 1992, passing about 18 miles (300 km) above Earth at a speed of 8.1 miles or 14.1 km per second. On October 29, 1993, *Galileo* took a historic photograph of asteroid 951 *Gaspera* from a distance of 16,200 km, the first close-up photo ever taken of an asteroid in space.

US UNMANNED PLANETARY AND LUNAR PROGRAMMES

Mariner: The *Mariner* series of spacecraft were designed to fly past or orbit the planets, particularly Mercury, Venus and Mars and provided the early information on Venus and Mars. While *Mariner-9*, orbiting Mars in 1971, returned the most startling photographs of that planet and helped pave the way for a *Viking* landing. In 1976, the *Mariner 10* explored Venus and Mercury in 1973 and was the first probe to use a planet's gravity to whip it towards another.

Pioneer: The United States' first series of sophisticated interplanetary spacecraft, *Pioneer 10* and *Pioneer 11* reached Jupiter in 1973 and 1974 and continued to explore Saturn and the other outer planets. *Pioneer 11* examined the Saturn system in September 1979. Significant discoveries included the finding of a small new moon and a narrow new ring. In 1986, *Pioneer 10* was the first man-made object to escape the solar system. *Pioneer Venus 1* and *Pioneer Venus 2* reached Venus in 1978 and provided detailed information about the planet's surface and atmosphere.

Ranger: The *Ranger* is NASA's moon exploration programme which provided more than 17,000 close-up pictures, giving us more information about the Moon in a few years than in all the time that had gone before. Spacecraft were designed for a crash landing on the Moon, taking pictures and returning scientific data up to the moment of impact.

Surveyor: This was a series of unmanned spacecraft designed to land gently on the Moon and provide information on the surface in preparation for the manned lunar landings. Their legs were instrumented to return data on the surface hardness on the Moon. *Surveyor* dispelled the fear that *Apollo* spacecraft might sink several feet or more into the lunar dust.

Viking: It is the name for two spacecraft designed to conduct detailed scientific examination of the planet Mars, including a search for life. *Viking 1* landed on July 20, 1976 and *Viking 2* on September 3, 1976. More was learnt about the Red Planet in a few short months than in all the time that had gone before. But the question of life on Mars remains unsolved despite the NASA releasing photographs (August 17, 1996) of carbonate mineral globules (c) found in the meteorite *Allan Hills-84001*, which is believed to have once been a part of Mars three to four billion years ago.

Voyager: The *Voyager* was designed to explore Jupiter and other outer planets. *Voyager 1* and

Voyager 2 passed Jupiter in 1979 and sent back startling colour TV images of that planet and its moons. They took a total of about 33,000 pictures. *Voyager 1* passed Saturn in November 1980 and *Voyager 2* passed Saturn in August 1981 and Uranus in January 1986.

It encountered Neptune on August 29, 1989 and made many startling discoveries. It found four rings around the planet, six new moons, a Giant Spot and evidence of volcanic-like activity on its largest moon, Triton. The spacecraft sent back over 9,000 pictures of the planet and its system.

On February 13, 1990, at a distance of 3.7 billion miles, *Voyager 1* took its final pictures—the Sun and six of its planets as seen from deep space. NASA released the extraordinary images to the public on June 6, 1990. Only Mercury, Mars and Pluto were not seen.

SPACE WALK

Two Russian cosmonauts took a space walk of more than five hours on May 22, 1995 to help prepare their *Mir* space station for a visit from a US crew. Flight commander Vladimir Dezhurov and engineer Gennady Strekalov succeeded in moving a solar power block from one side of the station to the other.

The US astronaut Norman Thagard helped coordinate their work from inside a module attached to *Mir*.

Dezhurov and Strekalov had made the first out of the four planned space walks on May 12, which lasted six hours.

Meanwhile, the American astronauts who went on a mission to the International Space Station (ISS) by Space Shuttle *Discovery* in May 1999 completed a historic space walk (May 30) outside the station, thus laying the ground work for future construction of the orbital laboratory.

RECORD STINT BY RUSSIAN COSMONAUT

Russian cosmonaut Valery Polyakov returned to earth on March 22, 1995 after a record-breaking 438 days in space. He and two other crew members from the Russian space station, *Mir*, landed aboard a *Soyuz TM-20*, about 32 km northeast of Arkalyk in Kazakhstan.

Polyakov, 52, broke the endurance record of one year in space when he spent his 366th day in orbit on January 9, 1995. Mayak, monitored by the British Broadcasting Corporation, said a joint Russian-US crew of three was left on *Mir*

Polyakov is one of only five people to spend over 300 days in space. In his orbits to Mir, he travelled some 400 million km.

US Scientists Find New Planet: For the fourth time, a team of astronomers has found a planet orbiting a star about 30 light years from Earth.

The San Francisco State University astronomers found the planet after surveying about 100 stars. The planet has a mass of about 80 per cent that of Jupiter. It is 14.4 million km from its star and travels around it every 14.76 days.

By contrast, Earth is 148.8 million km from the Sun, its star, and takes 365 days to complete an orbit.

Comet Hyakutake: Comet Hyakutake came closest to the Earth (15 million km). Named after the Japanese amateur from the town of Hayato situated in Japan's southernmost district of Kagoshima, who spotted it with a pair of binoculars in January 1996, *Hyakutake* (also known as *C/1996 B2*) is the third in a series appearing on the firmament in ten-year intervals, following Comet West in 1976 and Comet Halley in 1986.

Black Hole Detected: Photographs from the Hubble space telescope have confirmed the existence of a black hole equal to the mass of two billion suns.

The Space Telescope Science Institute said the black hole is in the centre of a galaxy labelled NGC 3115, located some 30 million light-years away in the constellation Sextans.

University of Michigan astronomers first spotted evidence of the black hole using ground telescopes in 1992, but it took careful observation of Hubble's images at the Institute of Astronomy in Hawaii to confirm the find. The Hawaii astronomer, Mr. John Kormendy, found that the black hole was twice the size the Michigan team's ground telescope had predicted.

Galileo Takes a Closer Look at Jupiter's Largest Moon: The *Galileo* space probe flew within 260 km of Jupiter's largest moon Ganymede on September 7, 1996, taking pictures of its ice, fault-ridden surface. Scientists at the Jet Propulsion Laboratory in Pasadena (California) said the unmanned spacecraft flew over Ganymede's North Pole at 1900 GMT.

The mission was *Galileo*'s second flyby of Ganymede—the largest moon in the solar system—since arriving in the jovian atmosphere in December, 1995. *Galileo* was collecting new pictures of two regions on the Moon's surface Unik—Sulcu and Galileo Regio.

TWO NEW GALAXIES FOUND

A team of Canadian and US astronomers said on March 24, 1995 that it discovered two new galaxies previously hidden by thick clouds of space dust. The galaxies—Independent of stars, planets, gas and dust—were initially detected in Oct. 1992 by a US observatory, but confirmed only recently.

British astronomers on April 10, 1997 also claimed that they have discovered two new galaxies. They have named the first galaxy as the Antlia and the second as the Argo.

Most nearby galaxies, conveniently named the "local group", are satellites of either the Earth's own Milky Way or the Andromeda Galaxy. But Antlia, about three million light years away, is on its own. "It is in a region of space previously thought to be devoid of nearby galaxies and is important for our understanding of the local group because there are very few members that are isolated in this way," said the Royal Astronomical Society in a statement on April 10, 1997. The second galaxy, Argo, was found just outside the "local group" and is also in a region of space that is fairly empty.

Mr. Mike Ivin of the Royal Greenwich observatory with two of his students reported the findings. He said: "Most astronomers concentrated on big, bright galaxies, but the small ones offered insights."

FIRST WOMAN COMMANDER FOR NASA MISSION

First Woman Commander For NASA Mission: NASA achieves the unique distinction of launching the first-ever woman-manned space flight aboard the space shuttle Columbia which blasted off from Cape Canaveral, Florida on July 23, 1999 with Air Force Colonel Eileen Collins (42) as the first woman commander. The goal of the live-day mission is to place the 'Chandra' X-ray Observatory (named after India-born Nobel Laureate astrophysicist Dr. S. Chandrasekhar) in orbit, to examine the most powerful sources of X-rays in the universe—black holes, colliding galaxies as also the remains of supernova. The first woman sent into space was Russian, Valentina Tereshkova in 1963. The first American woman was Sally Ride in June 1983. In 1995, Shannon Lucid set a record on the Mir space station, spending 188 days aloft. The same year, Colonel Collins was the first woman to pilot the shuttle.

ULYSSES EXPLORES SUN'S NORTH POLE

The *Ulysses* spacecraft shifted position near the Sun on June 19, 1995 to begin the second phase

of its investigation of the Solar System's star, the US Space Agency NASA announced. *Ulysses*, a joint mission of NASA and the European Space Agency, climbed to 70 degrees north of the Sun's equator and was to spend the next 110 days gathering information about the complex forces at work over this high latitude region of the Sun, reaching a maximum northern latitude of 80.2 degrees.

Ulysses then started journey to the orbit of Jupiter and is scheduled to return in September 2000 to the vicinity of the Sun, again in high latitudes. The two passes will allow the craft to gather data on the ebb and flow of the Sun's storms. The Sun is currently nearing the most inactive phase of its 11-year solar cycle, meaning fewer sunspots form in a given period of time.

Ulysses spacecraft was launched from the space shuttle *Discovery* on October 6, 1990 and made its first solar encounter in 1994. A second encounter took place in June 1995. It is an international project to study the poles of the Sun and interstellar space above and below the poles. The 814-lb (370-kg) spacecraft will be put into an orbit at right angles to the solar system's ecliptic plane. (The ecliptic is the plane in which the Earth and most of the planets orbit the Sun). This special orbit will allow the spacecraft to examine for the first time the regions of the Sun's north and south poles. Besides examining the Sun's energy fields, instruments on *Ulysses* will study other phenomena from the Milky Way and beyond.

While scientists have studied the Sun for centuries, they know very little about matter reaching the solar system from other nearby stars. This is because particles reaching the Sun's magnetic field from beyond the solar system are greatly changed by the Sun's magnetic field and by collision with particles flowing outward from the Sun. No spacecraft has ever left the solar system to make actual measurements of the interstellar medium.

MARS OBSERVER MISSION

The successful *Mars Observer* was launched at Cape Canaveral on September 25, 1992. Its mission was to study the surface, atmosphere, interior and magnetic field of Mars for a full Martian year.

After an 11-month cruise, *Mars Observer* arrived at the red planet on August 24, 1993 and was to be placed in a special orbit that would circle above Mars about every two hours. Communications with

the spacecraft were lost and by the end of August, efforts to re-establish contact had failed, dooming the mission.

GRABBING SATELLITE WITH HANDS

A dramatic space rescue ended on May 14, 1992 when a wayward satellite, plucked from the sky by a trio of astronauts and equipped with a new rocket, slid gently away from the shuttle *Endeavour*, which was blasted off on its maiden flight with seven astronauts on May 7, 1992.

The 4,000-kg spacecraft, which eluded the shuttle crew for two days and prompted desperate capture measures by the National Aeronautics and Space Administration (NASA), proved uncooperative right up to the last when an electrical problem delayed its deployment from a launch pad in the shuttle payload bay for several moments.

Earlier, reports indicated that NASA was not very hopeful about the *Endeavour* mission being successful because the satellite had remained intractable and defied the astronauts' efforts to attach a new booster rocket to it. The *Endeavour's* sojourn in space could also not be indefinitely prolonged to give all the time the astronauts would need to complete their mission. Stepping out into the void of space to reach the hulking satellite and yanking it out of an orbital wildness added up to a package of all space age terrors.

The rescue of the satellite, stranded in a useless orbit for two years, marked a major milestone for the US space agency in its recovery from the January 1986 explosion of the shuttle *Challenger*.

Before the flight, NASA officials said they considered this mission the end of the *Challenger* era because of its risky assignment and because it was the maiden voyage of the \$2-billion *Endeavour*, built to replace *Challenger*.

RIPPLES OF MATTER FOUND NEAR EDGE OF UNIVERSE

A NASA satellite has found huge ripples of matter near the edge of the universe, a momentous discovery that explains how stars and galaxies evolved from the *Big Bang* that created the cosmos, scientists have said in Los Angeles.

The discovery of NASA's cosmic background explorer spacecraft caps a 28-year quest for the solution of one of science's most vexing puzzles: how did matter that was uniformly spread out in the newborn universe start clumping together to produce stars, galaxies and clusters of galaxies?

The ripples, created almost 15 billion years ago, were detected by their radiation, which has been travelling towards the Earth at the speed of light. The earth-orbiting *Coba* spacecraft made more than 300 million measurements since its 1989 launch. It detected nearly imperceptible variations in the temperature of the radiation, which measures 454 degrees below zero Fahrenheit (270 degrees below zero Celsius).

PATHFINDER LANDS ON MARS

Mankind added yet another glorious chapter in the history of space research on July 4, 1997 when the US spacecraft *Pathfinder* made a perfect landing on Mars after a seven month journey. Scientists at Pasadena, California, experienced one of the thrilling and rewarding moments of their life when they saw their dreams come true after almost 21 years of sustained endeavour to see this day of great accomplishment. "We are on the surface of Mars and have received our first telemetry," exclaimed one of the chiefs of the Jet Propulsion Laboratory at Pasadena.

The first photographs received from the spacecraft showed both the spacecraft as well as a broad field of rocks and sand stretching to hills on the far horizon. The two hills, each several feet high and standing about a mile to the South West have been named by Scientists as "Twin Peaks" while a large and dark rock resembling a sleeping bear as "Yogi" and the white stripe running down the slope of one hill as "Ski Run". The first chemical analysis of a stone by *Pathfinder* robot has yielded a surprising result indicating that it might be a kind of volcanic rock common on earth.

Analysis of a rock called "Scooby Doo" has shown that Mars is more similar to earth than even the moon. It has also been proved that the meteorite believed to have come from Mars and thought to contain fossil evidence of ancient life, indeed did come from the red planet. Further although there is no liquid water on Martian Surface now, scientists figure that the planet is water-rich. According to them, vast amounts of frozen water exist in the north polar cap and beneath the surface as permafrost. Meanwhile, the *Sojourner* has sent images suggesting signs of ancient water actively on Mars. Scientists are analysing the light-coloured vertical mark on the hill side which could be an avalanche gully. Horizontal features on another hill could be terraces cut by moving water.

Explorations to Mars in the last two decades or more undertaken by the U.S.A. and former USSR

have been a mixed bag of successes and failures. While the Russian spacecraft have suffered malfunctioning off and on, registering partial successes only, US missions had six spinoffs, beginning with the *Mariner 4* fly-by of the planet in 1965, and three failures. In 1962 *Mars Observer* was lost as it approached the Red Planet for a planned orbiting mission.

The future explorations to Mars would depend upon the success of what *Pathfinder* does now. *Pathfinder* and its rover, *Sojourner*, now on Martian surface are not equipped to search for signs of life, but there is said to be what is called an alpha proton X-ray spectrometer to determine the mineral content of rocks scattered around the landing site. Since the rocks are thought to have been washed on to the plain from the ancient highlands nearby, their mineral composition should provide clues to the planet's early environment, whether it was indeed a warmer, wetter place where microbial life could possibly have developed.

PATHFINDER DECLARED DEAD

After more than five fruitless months, NASA scientists declared the \$266 million *Pathfinder* space craft officially dead on March 11, 1998. The space craft which sent home scientific findings, including 500 pictures and 16000 images by the *Sojourner* rover, succumbed to the cold and dust of the martian winter.

GIGANTIC STAR MEASURED

Observers in Chile and Australia have found a star so immense that as viewed from earth, it looks larger than any other star. The star, R. Doradus, which is in the Southern Hemisphere constellation Dorado, was measured as having a diameter some 370 times that of the sun.

Most-distant Galaxy : An international team of astronomers, using NASA's (National Aeronautics and Space Administration) Hubble Space telescope with the light-collecting power of the W.M. Keck telescope, has discovered the universe's most-distant galaxy, some 13 billion light years from earth.

Cassini blasts off : The \$ 3.4 billion Titan 4-B rocket carrying the Cassini Saturn probe with 32 kg of plutonium blasted off from Cape Canaveral air station in Florida on October 15, 1997 on a 7-year journey.

A still farther most distant galaxy : Yet in a watershed discovery in cosmology, a team of US scientists led by Dr. Arjun Dey, a post-doctoral fellow at John Hopkins University, has traced with

the help of a telescope, the most distant object in all creation, a young galaxy that existed when the universe was in its infancy. The discovery effectively stretches the reach of human perception 90 million light years farther than it has ever extended before. With the latest galaxy, scientists have set their eyes at the mysterious period less than a billion years after time and space began in the "big bang" explosion.

Indian-American Among US Space Shuttle Crew : Dr. Kalpana Chawla, the first Indian - or Indian-American woman was among the 6-member crew, as a Mission Specialist, on US Space Shuttle, Columbia's flight STS-87 which blasted off on November 19, 1997. The purpose of the 16-day space mission is to study sun's outer atmosphere. However, the shuttle developed snags and efforts were made to relieve manually the \$10 million Spartan Solar Observatory (360 kg) that tumbled away from Shuttle's robot arm. Ultimately, the efforts met with success, when one American Winston Scott & one Japanese, Takao Doi took a risky space walk and the observatory was put into place. Meanwhile NASA is considering another shuttle spacewalk by the duo (Winston Scott and Takao Doi) to grab the Spartan Satellite (which will be launched again) from orbit, to perform at least part of its planned 2-day study of the Sun's fiery outer space.

SHORT-ANSWERED QUESTIONS

Q. Who was the first man to go into space?

A. The Russian cosmonaut Yuri Gagarin led the first successful manned space flight on April 12, 1961. He completed a single orbit of the earth in 89.34 minutes in the 4.65-ton space vehicle Vostok 1 which took off from Tyura Tam in Kazakhstan and landed near the village of Smelovka, near Engels, in the Saratov region of the erstwhile USSR (now CIS).

Q. Who was the first woman to go into space?

A. The first woman to orbit the earth was Valentina Vladimirovna Tereshkova, who was launched in Vostok 6 from Tyura Tam in the former USSR (now CIS), on June 16, 1963 and landed on June 19, 1963 after a flight of 2 days, 22 hours, 42 minutes.

Q. Who was the first person to walk in space?

A. Lt. Col. Alexei Leonov of the former USSR (now CIS) was the first person to venture outside a space capsule Vaskhod 2 on March 18, 1965.

Q. Who was the first woman to walk in space?

A. Soviet cosmonaut Svelana Savitskaya was the first woman to walk in space on July 25, 1984 when she left *Salyut 7* space station to do a welding job on the outside of the orbital complex. She is also the only woman to have made two space flights.

Q. Who has the record of longest manned space flight?

A. Two Soviet cosmonauts, Vladimir Titov and Musa Manarov spent a record time of 366 days in space. Titov (41) and Manarov (37), were launched into space on December 21, 1987 on a mission to the orbiting complex *Mir*, which is operating as Russia's permanently manned space station. They returned to earth on December 21, 1988 in their *Soyuz TM-6* spacecraft.

Earlier, Soviet cosmonaut Yuri Romanenko refused to return to earth on December 29, 1987 after 326 breathtaking days aboard the *Mir* orbital complex. He broke the previous space endurance record of remaining in space for 287 days set in 1984 by three other cosmonauts.

Q. Why is the weight of a man on the surface of the moon only about one-sixth of his weight on earth?

A. The gravity of the moon is only one-sixth of the gravity of Earth. The gravitational pull is accordingly less. Hence, the weight of a man on the surface of the Moon is only one-sixth of his weight on the surface of Earth.

Q. Name the apparatuses left on the moon by US astronauts of Apollo-12.

A. The following are the instruments: (1) Seismometer; (2) Spectrometer; (3) Magnetometer; and (4) Lunar Ionosphere detector.

Q. Why does a man flying in space experience weightlessness?

A. The man flying in space is circling the earth at a very great speed. It results in the development of a centripetal force which acts away from the earth. The weight of the man which acts towards the earth is utilised to cancel the effect due to the centripetal force. Therefore, the man experiences weightlessness.

Q. Write a short note on Escape Velocity.

A. Escape Velocity: It is the minimum velocity which a projectile or 'space probe' must have in order to escape from a particular gravitational field. The escape velocity from the earth's surface is about 11,200 metres/sec. (approx 7 miles/sec). The escape velocity from the surface of the moon (or planet) depends upon the mass and diameter of the moon (or planet) and it is 2,370 metres/sec. (5,300 mph).

6. Earth

The Earth is the third nearest planet to the Sun and is the fifth largest planet. It has an equatorial diameter of 12,756 km and a polar diameter of 12,714 km. The Earth is at a distance of 149,597,900 km from the Sun and orbits round the Sun at a speed of 107,220 km per hour, making one revolution in 365 days, 5 hours, 48 minutes and 45.51 seconds. It completes one rotation on its axis every 23 hours, 56 minutes and 4.091 seconds.

The Earth is a unique planet. It is a bit pear-shaped rather than a true sphere. The Earth is considered a solid, rigid mass with a dense core of magnetic, probably metallic material. It is the only planet containing ample water and air around it. The temperature on the Earth is also suitable for human life.

DIMENSIONS OF EARTH

Mass of Earth: 5.882×10^{21} tons.

Density of Earth: 5.517 times that of water.

Volume of Earth: 1,083,208,840,000 cubic km.

Equatorial Circumference: 40,075.03 km.

Polar or Meridional Circumference: 40,007.89 km.

Equatorial Diameter: 12,756 km.

Polar Diameter: 12,714 km.

Land and sea surface: The estimated total surface area of the Earth is 510,066,100 sq km. of which the sea or hydrosphere covers five-sevenths or more accurately, 70.92 % and the land or lithosphere two-sevenths or 29.08 %. The mean depth of the hydrosphere is 3,554 metres

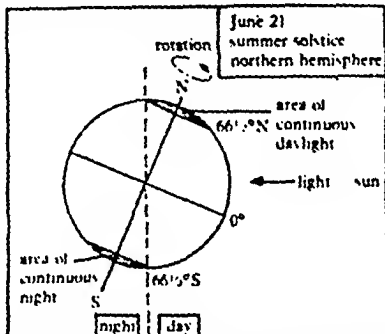
EARTH'S MOTIONS

Earth's Axis is an imaginary line which runs right across and passes through the centre of the Earth. The Earth spins round its axis which always remains inclined at an angle of $66\frac{1}{2}^\circ$ to the plane of Earth's orbit.

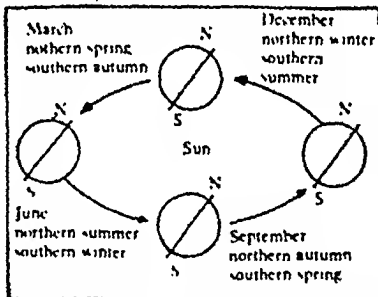
Rotation is the spinning of the earth on its axis. The Earth rotates from west to east and takes 23 hours, 56 minutes and 4.091 seconds to complete one rotation.

At the Equator there is a 12-hour day and a 12-hour night. North of $66\frac{1}{2}^\circ$ N there is continuous daylight; south of $66\frac{1}{2}^\circ$ S there is continuous night.

Days become longer with increasing latitude north shorter with increasing latitude south.



Revolution is the movement of the Earth around the Sun simultaneously with its rotation. It takes 365 days, 5 hours, 48 minutes and 45.51 seconds for it to complete one revolution.



Orbit is the elliptical path of Earth's revolution round the Sun.

Perihelion is nearest to the Sun. The Earth reaches its perihelion in the beginning of January.

Aphelion is the point in Earth's or other planet's orbit which is farthest from the Sun. The Earth reaches its aphelion in the end of June.

Leap Year is the year in which the month of February has 29 days. Leap year occurs once in four years. Earth actually takes 365 days, 5 hours, 48 minutes and 45.51 seconds to complete one revolution round the Sun. For the sake of convenience the year is rounded off as 365 days. The remaining one-fourth of the day has to be accounted for since a year represents the time taken by Earth to complete one revolution round

the Sun. Therefore, once in four years one day is added to the year in the month of February, thus making it a leap year. For the sake of convenience, leap year has also been reckoned as the year divisible by four; for example, the years 1996, 1992, 1988, 1984, 1980, 1976, 1972, 1968, 1964, and so on.

Solstice is the date on which the Sun shines vertically over a tropic. On June 21 the Sun shines vertically on the Tropic of Cancer and this date is termed as summer solstice for northern hemisphere and winter solstice for the southern hemisphere. Similarly, on December 22 the Sun shines vertically on the Tropic of Capricorn. Hence, this date is summer solstice for the southern hemisphere and winter solstice for the northern hemisphere.

Equinox means equal nights (*aequus*=equal; *nox*=night). It is the period when Sun inevitably shines vertically over the equator at noon, making the duration of days and nights of the same span of the period, i.e., twelve hours day twelve hours night. March 21 and September 23, when days and nights are of equal duration throughout the globe, are called equinoxes. March 21 is called vernal equinox and September 23 is called autumnal equinox.

Q. What causes changes in seasons?

A. The inclination of Earth's axis by $66\frac{1}{2}^\circ$ and Earth's revolution round the Sun bring about changing seasons. The two hemispheres experience summer when they are closer to the sun and winter when farther away from it.

Q. What do you know about the shape of the Earth?

A. The Earth is an oblate spheroid. It is a little flattened at the poles and bulges out slightly at the equator.

Q. What are the zones of the Earth?

A. (i) **Torrid Zone:** It lies between $23\frac{1}{2}^\circ$ North and $23\frac{1}{2}^\circ$ South, that is, between the Tropic of Cancer and Tropic of Capricorn. This is the hottest zone, since the rays of the Sun are more nearly perpendicular here than in any other zone.

(ii) **North Temperate Zone:** It lies between $23\frac{1}{2}^\circ$ North and $66\frac{1}{2}^\circ$ North. This zone has a marked annual range of temperature.

(iii) **South Temperate Zone:** It lies between $23\frac{1}{2}^\circ$ South and $66\frac{1}{2}^\circ$ South. This too has a marked annual range of temperature.

(iv) **North Frigid Zone:** It lies between $66\frac{1}{2}^\circ$ North and 90° North. It is extremely cold throughout the year.

(v) **South Frigid Zone:** It lies between $66\frac{1}{2}^\circ$ South and 90° South. It too is extremely cold throughout the year.

Q. Where are days and nights equal throughout the year and why?

A. Days and nights are equal throughout the year at the Equator. The Equator runs through the centre of the Earth and the centre of the Earth remains exactly in the same position in relation to the Sun throughout the year.

Q. When are days and nights longest in the year?

A. Day is longest on June 21 and night is longest on December 22 in the Northern Hemisphere. The opposite is the case in the Southern Hemisphere.

7. Map Reading

Equator represents the imaginary line passing round the earth midway between the north and south poles. It thus divides the Earth into two equal halves (the Northern and Southern hemispheres).

Meridians represent the imaginary lines drawn out on the global map, from pole to pole and perpendicular to the Equator.

Prime Meridian is the 0° meridian which passes through Greenwich, a place near London. It is also known as the Greenwich Meridian.

Longitudes are the equidistant lines drawn east and west of the Greenwich Meridian. They denote angular distances of a place due east or west of the Greenwich Meridian. They converge at the two poles.

Latitudes on the other hand are parallel lines drawn north and south of the equator. They indicate angular distance of a place in relation to the equator.

Tropics are literally turning points. They refer to those parallels where the sun is imagined to halt its movement and turn about northward or southward as the case may be. The $23\frac{1}{2}^\circ$ north parallel is thus termed as the Tropic of Cancer and the $23\frac{1}{2}^\circ$ south parallel as the Tropic of Capricorn.

Great Circles are imaginary circles whose plane passing through the centre of the Earth bisects it into two equal halves. For example, equator is a great circle. Parts of opposite meridians also constitute great circles.

Small Circles are smaller to the great circles. The latitudes north and south of the Equator make small circles.

Contour Lines join places of equal height above sea level on a map.

Map Projection is the method by which the curved surface of the earth is depicted on a flat surface of plane. In other words, it represents the projection of curved lines of latitude and longitude on a global map.

Zenithal Projection is adopted to construct equal area or equidistant maps. Equal area projection is frequently shown as a polar projection. Here concentric parallels are drawn with the pole at the centre and with meridians as straight lines converging on the pole.

Conical Projection represents a part of the globe, projected upon a tangent cone, which in effect is opened up and laid flat.

Cylindrical Projection represents the globe as projected upon a surrounding cylinder, which in effect is opened up and laid out. Here the lines of latitude and longitude are drawn as straight lines intersecting at right angles.

Mercator Projection represents the map of global area in a cylindrical type of projection where the lines of latitude and longitude are drawn as straight lines intersecting at right angles instead of the curved lines they ought to be. This projection can give correct shapes only for very small areas and their comparative size will be wrong.

8. Lithosphere

Lithosphere refers to the top crust of the Earth on which our continents, countries and the ocean basins rest. The lithosphere has a thickness between 35 to 50 km in the continental regions, but becomes thin between 6 to 12 km under the ocean beds. In the high mountain regions, its thickness is estimated at about 60 km.

Though, strictly speaking, lithosphere includes both the land mass as well as the ocean floors, generally it is used to denote only the land surface, which occupies a little less than 30 per cent of total area of the Earth.

Our knowledge about the interior of the Earth is based on the seismic waves, as they travel through the Earth. Scientists have concluded that the centre of the Earth or Earth's core is a solid sphere with diameter of about 2,740 km. The rocks in this solid core are about three times as dense as those in the crust.

Surrounding the inner core of the Earth is an outer core, which is about 2,100 km thick. In this outer core, temperature ranges between 2,000°C to 5,000°C.

Between the outer core and the crust of the Earth is the dense 'mantle' which is about 2,900 km thick. The 'mantle' is mostly solid, but at its top, some rocks are molten or semi-molten.

The topmost portion of Earth, the crust, is the land mass comprising soil, sand and rocks. In fact, all the sand and much of the soil that we have, has come to us from ancient rocks that have crumbled down under the impact of heat of the Sun and the cool of the rains, a process that has gone on for thousands of years.

Q. What are rocks? How would you classify them?

A. Rocks are the main materials composing the Earth's crust. Rocks are composed of minerals. Minerals are natural inorganic substances each with a fairly definite chemical composition and recognisable crystal form, colour, hardness, lustre, fracture and other physical characteristics. Rocks of the Earth's crust are grouped in three principal classes:

(1) **Igneous Rocks:** Rocks which are solidified directly from molten materials are called igneous rocks. To a certain extent, all other rocks originate from igneous rocks. Therefore, these rocks are commonly referred to as primary rocks. These are divided into extrusive rocks, viz., lava and pumice, or intrusive rocks, such as some granites or gabbro which is high in calcium and magnesium and low in silicon. The intrusive rocks are solidified beneath the surface while extrusive rocks are solidified at the surface.

(2) **Sedimentary Rocks:** These rocks are formed from materials which have accumulated as a result of various processes, viz., by the build-up of particles derived from other rocks or from the remains of organically formed matter (from living or once-living things), or from deposits created by chemical action. The rocks formed by the deposition of sediment in water are conglomerates (e.g., gravel, shingle, pebbles), sandstones and shales (layered clay and claystone). Peat, lignite, bituminous coal and anthracite are the result of the deposition of organic matter. Gypsum, chalk and limestone are examples of chemical sedimentation.

(3) **Metamorphic Rocks:** These rocks are originally igneous or sedimentary but have been changed by pressure, heat or action of water. When individual grains tend to deform and interlock from existing rocks, they are then called metamorphic rocks. For example, granite, an igneous rock, may be metamorphosed into a gneiss. Limestone, a sedimentary rock, may become marble. Sandstone may be metamorphosed into quartzite and shale when greatly compressed into slate.

SHORT- ANSWERED QUESTIONS

Q. Write short notes on:

(i) Weathering (ii) Denudation (iii) Spring.

A. (i) **Weathering:** It means the breaking up or disintegration of rocks. The chief agents of weathering are temperature, frost, air and rain.

(ii) **Denudation:** It means laying bare of a rock which was previously covered. The chief agents of denudation are temperature, water in its various forms, air and wind, plant life and animal life.

(iii) **Spring:** A spring is a place where water oozes out of the ground spontaneously.

Q. Explain the principle of Artesian Well.

A. In an artesian well underground water is reached by sinking a shaft from the surface and the water rises up to the surface by hydraulic pressure. These are very common in Australia and Punjab (India). These depend upon the principle that water keeps its level. Whenever a hole is dug through the non-porous strata to reach the porous one, water rushes out to keep its own level.

Q. What is snow line?

A. It is a line beyond which snow never melts. It varies with the altitude.

Q. What is glacier?

A. A vast accumulation of ice and snow which moves slowly till it melts and forms a river is called glacier.

Q. What is iceberg?

A. A large mass of ice detached from a glacier and floating in the sea is called iceberg.

Q. Write short notes on:

(i) Canyon (ii) Delta (iii) Geyser (iv) Rift Valley (v) Bluff.

A. (i) **Canyon:** A deep and narrow river valley with steep bank is called a canyon. The most famous canyon in the world is that of the Colorado (USA). For about 480 km, the river flows through a gorge or a canyon the banks of which are, at some places, more than one-and-a-half kilometre high.

(ii) **Delta:** An alluvial deposit shaped like the Greek letter Δ formed at mouth of a river is called

delta. Nile delta is well known in the world and so is the Sunderbans delta (West Bengal) in India and Bangladesh.

(iii) **Geyser:** It is a fountain of hot water, issuing from a hole which extends deep into the Earth's crust. The water is hurled high into the air by the force of steam formed low in the hole. It contains minerals in solution and they get deposited around the hole from which the water gushes out.

(iv) **Rift Valley:** A long and narrow valley formed by the sinking of a portion of the earth is called a Rift Valley.

(v) **Bluff** (also called river cliff): It is the outer bank of a meander. It presents a bold and nearly perpendicular front as a coastline. The bluff is kept steep by undercutting since river erosion is concentrated on the outer bank.

Q. What is volcano?

A. **Volcano:** It is a conical hill having a funnel shaped opening from which lava comes out. *Ojos del Salado* is one of the loftiest active volcanoes in South America. It is 6,885 metres high.

Q. What are earthquakes? How are they caused?

A. It is the shaking of the Earth's crust sometimes accompanied by a permanent elevation or depression, but often no lasting effect is visible on the surface except the damage done by shaking. The main causes of earthquakes are:

(i) Sudden cooling and contraction of the Earth's surface.

(ii) Coming into activity of some dormant volcanoes.

(iii) Due to internal heat, sometimes water changes into steam, expands and this causes an earthquake.

Q. What are the main natural regions of the world? Give a brief description of each.

A. A natural region consists of lands, which form a single unit as regards *relief, climate, natural vegetation, cultivated crops, animal life and human activities*.

The following are the important regions of the world:

(i) **Equatorial Region:** It lies on both sides of equator between 5 degrees south and 5 degrees north, except where there are plateaus and mountains. Here the climate is very hot and moist throughout the year.

(ii) **Savannas or Sudan Type Region:** The region lies on both sides of equator roughly between 5 degrees and tropics. Here summers are hot and moist and winters are warm and dry. Characteristic vegetation is tall grass.

(iii) **Monsoon Region:** It lies mostly to the south-east of Asia and includes portions of Australia, Africa and America. Hence the climate is hot and moist in summer and warm and dry in winter. Natural vegetation is forests.

(iv) **Hot Deserts:** They are situated near the tropics between 20 degrees and 30 degrees in the west of the land masses. These occupy about one-fourth of the land surface of the Earth. The climate of the region is mostly hot and dry. The Sahara, Arabia, West Rajasthan and Sind deserts are included in this region. Gold, silver, copper and diamonds are available in these deserts.

(v) **Mediterranean Region:** This region lies around the Mediterranean Sea and on both sides of the equator, in the west of the land masses and between 30 degrees and 45 degrees north and south of equator. The climate is hot in summer and wet in winter. It is famous for fruit trees like olive, vine, lemon, almonds, etc.

(vi) **Steppe Lands:** These grasslands include Prairies (North America), Steppes (Eurasia) in the northern hemisphere and Pampas (South America), Veld (Africa) and Downs (Australia) in the southern hemisphere. Natural vegetation is grass.

(vii) **British Type Region:** It lies between 45 degrees and 60 degrees. This region has warm summers and cold winters with well distributed rainfall. The chief agricultural products are wheat, barley, etc., etc.

(viii) **China Type Region:** It lies in the east of land masses between 30 degrees and 45 degrees. Here summers are warm and moist

and winters are very cold. Natural vegetation is forests.

(ix) **Eastern Type Region:** This region includes eastern Canada, northeast United States and north Japan. Here winters are cold and summers are warm. Natural vegetation consists of coniferous forests.

(x) **Siberian Type Region:** It includes Siberia, north Europe specially north Russia, Finland, Scandinavia, etc. Here winters are very severe. Natural vegetation is coniferous forests. Wheat, potatoes, etc., are grown in summer.

(xi) **Tundra Type Region:** It includes north Europe, north Asia and north Canada. Its climate is extremely cold. The most important and useful animal of the region is the reindeer which lives on mosses and supplies most wants of the people living in this region: meat, milk, clothes, bones for snows and covers for tents.

Q. What is the difference between Concordant Coastline and Discordant Coastline?

A. Concordant Coastline is said to exist when alternating outcrops of harder and softer rocks occur parallel to the coast.

Discordant Coastline is said to exist when alternating outcrops of harder and softer rocks occur at 90° to the coast.

Q. Why is sunshade hottest at the Equator?

A. This is due to the fact that at the Equator, the rays of Sun are almost falling vertically on the surface of the Earth and the area covered by the Sun's rays is the least. Hence the sunshine is hottest at the Equator.

PRINCIPAL MOUNTAIN PEAKS OF THE WORLD

Mountain	Height in metres	Range	Date of first ascent
1. Mount Everest	8,848	Himalayas	May 29, 1953
2. K-2 (Godwin Austen)	8,610	Karakoram	July 31, 1954
3. Kanchenjunga	8,597	Himalayas	May 25, 1955
4. Dhaulagiri	8,511	Himalayas	May 18, 1956
5. Makalu I	8,481	Himalayas	May 15, 1955
6. Dhaulagiri I	8,167	Himalayas	May 13, 1960
7. Manaslu I	8,156	Himalayas	May 9, 1956
8. Cho Oyo	8,153	Himalayas	Oct. 19, 1954
9. Nanga Parbat	8,125	Himalayas	July 3, 1953
10. Annapurna I	8,091	Himalayas	June 3, 1950
11. Gasherbrum I	8,068	Karakoram	July 5, 1954

<i>Mountain</i>	<i>Height in metres</i>	<i>Range</i>	<i>Date of first ascent</i>
12. Broad Peak I	8,047	Karakoram	June 9, 1957
13. Gasherbrum II	8,034	Karakoram	July 7, 1956
14. Shisha Pangma (Gosainthan)	8,013	Himalayas	May 2, 1964
15. Gasherbrum III	7,952	Karakoram	Aug. 11, 1975
16. Annapurna II	7,937	Himalayas	May 17, 1950
17. Gasherbrum IV	7,924	Karakoram	Aug. 6, 1958
18. Gyachung Kang	7,921	Himalayas	Apr. 10, 1954
19. Kangbachen	7,902	Himalayas	May 26, 1974
20. Disteghil Sar I	7,884	Karakoram	June 9, 1960
21. Himal Chuli	7,864	Himalayas	May 24, 1960
22. Khinyang Chhish	7,852	Karakoram	Aug. 26, 1971
23. Nuptse	7,841	Himalayas	May 16, 1951
24. Manaslu II (Peak 29)	7,835	Himalayas	Oct. 1970
25. Masherbrum East	7,821	Karakoram	July 6, 1960
26. Nanda Devi	7,816	Himalayas	Aug. 29, 1936
27. Chomo Lonzo	7,815	Himalayas	Oct. 30, 1954
28. Ngojumba Ri I	7,805	Himalayas	May 5, 1965
29. Rakaposhi	7,788	Karakoram	June 25, 1958
30. Batura Muztagh I	7,785	Karakoram	June 30, 1976
31. Zemu Gap Peak	7,780	Himalayas	Unclimbed
32. Kanjut Sar	7,760	Karakoram	July 19, 1959
33. Kamel	7,756	Himalayas	June 21, 1931
34. Namcha Barwa	7,755	Himalayas	Unclimbed
35. Dhaulagiri II	7,751	Himalayas	May 18, 1971
36. Salloro Kangri I	7,741	Karakoram	July 24, 1962
37. Batura Muztagh II	7,730	Karakoram	1978
38. Guria Mandhala	7,728	Himalayas	Unclimbed
39. Ulugh Muztagh	7,725	Kunlun Shan	Unclimbed
40. Qungur II (Kongur)	7,719	Pamir	July 12, 1981
41. Dhaulagiri III	7,715	Himalayas	Oct. 23, 1973
42. Jannu	7,709	Himalayas	Apr. 27, 1962
43. Tirdch Mir	7,706	Hindu Kush	July 21, 1950
44. Salloro Kangri II	7,705	Karakoram	Unclimbed
45. Disteghil Sar E	7,700	Karakoram	Unclimbed
46. Saser Kangri I	7,672	Karakoram	June 5, 1973
47. Chogolisa South West	7,665	Karakoram	Aug. 2, 1975
48. Phola Gangchhen	7,661	Himalayas	Unclimbed
49. Dhaulagiri IV	7,661	Himalayas	May 9, 1975
50. Shahkang Sham	7,660		Unclimbed

VOLCANOES

It is estimated that there are about 850 active volcanoes, of which 80 are submarine. Almost two-thirds of these are in the Northern Hemisphere. Most volcanoes occur at the boundaries of the Earth's crustal plates, such as the famous "Ring of Fire" that surrounds the Pacific Ocean plate. Of the world's active volcanoes, about 60 per cent are along the perimeter of the Pacific, about 17 per cent in an arc along the south of the Indonesian

islands and about 9 per cent in the Mediterranean area, Africa and Asia Minor. Vulcanologists classify volcanoes as extinct, dormant or active (which includes rumbling, steaming or erupting).

Cerro Aconcagua (6,960 metres), the highest Andean peak, is an extinct volcano, while Kilimanjaro (5,895 metres) in Africa and Volcan Lulliaillaco in Chile (6,723 metres) are classified as dormant. Among the principal volcanoes active in recent times are:

<i>Name</i>	<i>Height (ft)</i>	<i>Height (metres)</i>	<i>Range or Location</i>	<i>Country</i>	<i>Date of Last Notified Eruption</i>
Ojos del Salado	22,588	6,885	Andes	Argentina-Chile	1981—Steams
Guallatiri	19,882	6,060	Andes	Chile	1960
Colopaxi	19,347	5,897	Andes	Ecuador	1975
Lascar	18,507	5,641	Andes	Chile	1968
Tupungatito	18,504	5,640	Andes	Chile	1964
Popocatepetl	17,887	5,451	Altiplano de Mexico	Mexico	1920—Steams
Nevado del Ruiz	17,690	5,400	Andes	Colombia	1985
Sangay	17,159	5,230	Andes	Ecuador	1976
Klyuchevskaya	15,913	4,850	Sredinnyy Khrebet (Kamchatka Peninsula)	USSR (now CIS)	1974
Soplea					
Purace	15,059	4,590	Andes	Colombia	1977
Tajumulco	13,881	4,220		Guatemala	Rumbles
Mauna Loa	13,680	4,170	Hawaii	USA	1978
Tacana	13,379	4,078	Sierra Madre	Guatemala	Rumbles
Cameroon Mt.	13,350	4,070	(monarch)	Cameroon	1959
Erebus	12,450	3,795	Ross I	Antarctica	1975
Rindjani	12,224	3,726	Lombok	Indonesia	1966
Pico de Teide	12,198	3,718	Tenerife, Canary Is	Spain	1909
Semeru	12,060	3,676	Java	Indonesia	1976
Nyiragongo	11,385	3,470	Virunga	Zaire	1977
Koryakskaya	11,339	3,456	Kamchatka Peninsula	USSR (now CIS)	1957
Irazu	11,325	3,452	Cordillera	Costa Central	1967
Slamat	11,247	3,428	Java	Indonesia	1967
Mt. Spurr	11,070	3,474	Alaska Range	USA	1953
Mt. Etna	10,853	3,308	Sicily	Italy	1979

WORLD'S PRINCIPAL DESERTS

<i>Name</i>	<i>Approximate area in sq km</i>	<i>Territories</i>
The Sahara	8,400,000	Algeria, Chad, Libya, Mali, Mauritania, Niger, Sudan, Tunisia, Egypt, Morocco. Embraces the Libyan Desert (1,550,000 sq km) and the Nubian Desert (260,000 sq km)
Australian Desert	1,550,000	Australia. Embraces the Great Sandy (or Warburton) (420,000 sq km), Great Victoria (325,000 sq km), Simpson (Arunta) (310,000 sq km), Gibson (220,000 sq km) and Sturt Deserts
Arabian Desert	1,300,000	Southern Arabia, Saudi Arabia, Yemen, includes the Ar Rab'a Khali or Empty Quarter (647,500 sq km), Syrian (325,000 sq km) and An Nafud (129,500 sq km)
The Gobi	1,040,000	Mongolia and China (Inner Mongolia)
Kalahari Desert	520,000	Botswana
Takla Makan	320,000	Sinkiang, China
Sonoran Desert	310,000	Arizona and California, USA and Mexico
Namib Desert	310,000	In South West Africa (Namibia)
Kara Kum	270,000	Turkmenistan, USSR (now CIS)
Thar Desert	260,000	North Western India and Pakistan
Somali Desert	260,000	Somalia
Atacama Desert	180,000	Northern Chile
Kyzyl Kum	180,000	Uzbekistan-Kazakhstan, USSR (now CIS)
Dasht-e-Lut	52,000	Eastern Iran (sometimes called Iranian Desert)
Mojave Desert	35,000	Southern California, USA
Desierto de Secura	26,000	North West Peru

Note: Kara Kum and Kyzyl Kum together are known as the Turkestan Desert.

WORLD'S DEEPEST CAVES

<i>Cave</i>	<i>Country</i>	<i>Metres</i>
Reseau du Foillis, Haute Savoie	France	1455
Reseau de la Pierre St. Martin, Haute Savoie	France	1321
Snezhnaya, Caucasus	USSR (now CIS)	1280
Sistema Huautla	Mexico	1220
Gouffre Berger	France	1193
Sima de Ukendi	Spain	1185
Avenç B15, Pyrenees	Spain	1150
Schneeloch, Salzburg	Austria	1111
Sima G.E.S. Malaga	Spain	1098
Lamprechtsofen	Austria	1024
Reseau Felix Trombe	France	1018
Ogof Flynnon Ddu, Powys	Wales	308
Giant's Hole-Oxlow Caverns, Derbyshire	England	214
Reyfad Pot, Fermanagh	North Ireland	179
Carrowmore Cavern	Ireland, Republic	140

10. Peninsulas and Islands

LARGE PENINSULAS OF THE WORLD

<i>Name</i>	<i>Area in sq km</i>	<i>Name</i>	<i>Area in sq km</i>
Arabia	3,250,000	Labrador	1,300,000
Southern India	2,072,000	Scandinavia	800,300
Alaska	1,500,000	Iberian Peninsula	584,000

LARGE ISLANDS OF THE WORLD

<i>Island</i>	<i>Location and Status</i>	<i>Area in sq km</i>
Greenland	North Atlantic (Danish)	2,175,597
New Guinea	Southwest Pacific (Irian Jaya, Indonesian, west part; Papua New Guinea, east part)	820,033
Borneo	West mid-Pacific (Indonesian, south part; British protectorate, and Malaysian, north part)	743,107
Madagascar	Indian Ocean (Malagasy Republic)	587,042
Baffin	North Atlantic (Canadian)	476,068
Sumatra	Northeast Indian Ocean (Indonesian)	473,605
Honshu	Sea of Japan—Pacific (Japanese)	230,316
Great Britain	Off coast North-west Europe (England, Scotland and Wales)	229,883
Ellesmere	Arctic Ocean (Canadian)	212,688
Victoria	Arctic Ocean (Canadian)	212,199
Celebes	West mid-Pacific (Indonesian)	189,034
South Island	South Pacific (New Zealand)	150,461
Java	Indian Ocean (Indonesian)	126,884
North Island	South Pacific (New Zealand)	114,688
Cuba	Caribbean Sea (Republic)	114,525
Newfoundland	North Atlantic (Canadian)	110,681
Luzon	West mid-Pacific (Philippines)	104,688

<i>Island</i>	<i>Location and Status</i>	<i>Area in sq km</i>
Iceland	North Atlantic (Republic)	102,999
Mindanao	West mid-Pacific (Philippines)	94,631
Ireland	West of Great Britain (republic south part; United Kingdom, north part)	84,426
Hokkaido	Sea of Japan—Pacific (Japanese)	78,663
Hispaniola	Caribbean Sea (Dominican Republic, east part; Haiti, west part)	76,029
Tasmania	South of Australia (Australian)	67,897
Sri Lanka (Ceylon)	Indian Ocean (Republic)	65,610
Sakhalin (Karafuto)	North of Japan (USSR – now CIS)	63,610
Banks	Arctic Ocean (Canadian)	60,166
Devon	Arctic Ocean (Canadian)	54,030
Tierra del Fuego	Southern tip of South America (Argentinian, east part; Chilean, west part)	48,187
Kyushu	Sea of Japan—Pacific (Japanese)	42,018
Melville	Arctic Ocean (Canadian)	41,805
Axel Heiberg	Arctic Ocean (Canadian)	40,868
Southampton	Hudson Bay (Canadian)	40,663

11. Hydrosphere

Hydrosphere refers to the mantle of water occupying the greatest part of the Earth's surface. Oceans, which are interconnected, cover about 70.8 per cent of the surface of Earth. Pacific Ocean, which is the largest among the oceans, sprawls over an area of about 165,236,000 sq km, an area which is more than the total combined area of all the continents.

The oceans have an average depth of 3.5 km but their depth varies from place to place. The deepest known point is the Challenger Deep, a part of the Mariana Trench in the Pacific Ocean, which is 11,776 km deep.

The water in the oceans totals over 1,300 million cubic km, which is more than 97 per cent of world's total water. The balance of water resources are contributed by glaciers, ice and snow, fresh water lakes, rivers and the underground water.

The ocean floor consists of three main zones, viz., the continental shelf, the continental slope and the abyss. The continental shelves are, in fact, the submerged parts of the continents that gently slope into the oceans bordering these continents. They extend onwards to a depth of about 180 metres (600 feet) and considerably vary in width. For example, the continental shelf off north western Europe extends to about 300 kilometres, but off the west coast of North America, there is practically no continental shelf.

The true edge of the continents is however, the continental slope which begins from the point where

the continental shelf ends. The continental slope descends steeply having a depth extending to over 3.6 kilometres.

The abyss contains large sediment covered plains below the oceans. These plains are often interspersed by lofty volcanic mountains some of which surface as islands and long broad ridges which are in some places 2 to 4 kilometres high and up to 4,000 kilometres wide. The abyss also contains yawning chasms called deep sea trenches.

Continental Shelf (Littoral) is the shallow region of the sea extending to a depth of 100 fathoms (600 feet) with gradual slope.

Continental Slope is the region of the sea extending next to the continental shelf and having a depth up to 2,000 fathoms.

Continental Drift is the hypothetical tendency or ability of continents to drift on the earth's surface because of the weakness of the sub-oceanic crust. Observing the fact that close fit can be made between the continental shelves of the Western Hemisphere, Europe and Africa, many geologists believe that the continents were once part of a single land mass which has since been slowly drifting apart. This theory was first set forth in detail in 1912 by a German geologist, Alfred Wagner. He called the original land mass "Pangaea".

Salinity of the Water is affected by the extent of evaporation of surface water and the

Volume of fresh water added by rainfall, rivers and melting of icebergs. Enclosed seas in tropical areas which are subjected to rapid evaporation and denied fresh water are highly saline (e.g., Sambhar Lake of Rajasthan in India and Dead Sea).

Isohaline is the line which joins, on a map, points of the sea/oceans having equal salinity.

Ocean Current is the movement of a sizeable body of water as a current for fairly long distances along a specific path. It is known as 'drift current' when caused by the winds and as 'convection current' when brought about by variations in temperature. A 'warm current' is the one which flows from a warm to a cold region. The current flowing from a cold to a warm region is called a 'cold current'.

Gulf Stream refers to the warm ocean current which starts from the Gulf of Mexico and flows along the eastern coast of North America. Influenced by the westerly winds, it crosses the Atlantic, moves along the north-west coast of Europe and helps to keep the British and Norwegian coastal waters warm and navigable during the winter months.

Kuro Siwo (Black Current or Japan Current) is the warm ocean current which flows up the Asian east coast and is driven by westerly winds towards North America.

Tide is the periodic rise and fall of sea water. The rise and fall occur alternately twice a day. The tides are caused by the gravitational pull of the Moon and the Sun on Earth's surface including the sea water.

Spring Tides are caused as a result of the Moon and the Sun pulling the Earth gravitationally in the same direction.

Neap Tides are caused when the Moon and the Sun, in consequence, pull the Earth gravitationally in opposite directions.

Lagoon is a stretch of sea water, partly or fully separated by a narrow strip from the main sea.

Reef is a ridge of submerged rock or other hard substance in sea water. It becomes visible at low tides.

Coral Reef is a submerged ridge in sea water formed by heavy accumulation of the skeletons of coral phlyp, a sea weed or organism.

Bay is an indentation in the coastline, flanked by headlands and resulting from the more rapid erosion of softer rocks.

Atoll is a horse-shoe or ring shaped coral reef, encircling a lagoon.

Fjord refers to a narrow, deep, long and steep-walled indentation of a sea formed along the margin of glaciated coast. A Fjord is glaciated valley which has been submerged either by a post-glacial rise in sea level or a subsidence of the land. Fjords are commonly found in Norway and Sweden.

Strait is a narrow strip of water joining two large bodies of sea water, e.g., Bering Strait (connecting Arctic Ocean and Bering Sea); Bosphorus Strait (connecting Black Sea and Sea of Marmara).

Isthmus is a narrow strip of land connecting two large areas of land (e.g., Isthmus of Panama joining the North and South American continents).

Hinterland refers to the land region extending from a sea port and concerned with it in matters of commerce and trade.

12. Oceans and Seas

OCEANS

Ocean with adjacent seas	Area in million sq km	Percentage of world area	Greatest depth in metres	Greatest depth location	Average depth in metres
Pacific	181.20	35.52	11,776	Mariana Trench	4,188
Atlantic	106.48	20.88	9,460	Puerto Rico Trench	3,736
Indian	74.06	14.52	7,542	Java Trench	3,872
Total	361.74	70.92			

If the adjacent seas are detached and the Arctic regarded as an ocean, the oceanic areas may be listed as

Ocean	Area in sq km	Percentage of sea area
Pacific	166,240,000	46.0
Atlantic	86,560,000	23.9
Indian	73,430,000	20.3
Arctic	13,230,000	3.7
Other Seas	22,280,000	6.1
Total	361,740,000	100.0

SEAS

	<i>Principal Sea</i>	<i>Area in sq km</i>	<i>Average depth in metres</i>
1.	South China Sea	2,974,600	1,200
2.	Caribbean Sea	2,753,000	2,400
3.	Mediterranean Sea	2,503,000	1,485
4.	Bering Sea	2,268,180	1,400
5.	Gulf of Mexico	1,542,985	1,500
6.	Sea of Okhotsk	1,527,570	840
7.	East China Sea	1,249,150	180
8.	Hudson Bay	1,232,300	120
9.	Sea of Japan	1,007,500	1,370
10.	Andaman Sea	797,700	865
11.	North Sea	575,300	90
12.	Black Sea	461,980	1,100
13.	Red Sea	437,700	490
14.	Baltic Sea	422,160	55
15.	Persian Gulf (Arabian Gulf)	238,790	24
16.	Gulf of St. Lawrence	237,760	120
17.	Gulf of California	162,000	810
18.	English Channel	89,900	54
19.	Irish Sea	88,500	60
20.	Bass Strait	75,000	70

DEEP SEA TRENCHES

<i>Name</i>	<i>Length in km</i>	<i>Deepest point</i>	<i>Depth in metres</i>
Mariana Trench (West Pacific)	2,250	Challenger Deep	11,776
Tonga-Kermadec Trench (South Pacific)	2,575	Vityaz 11 (Tonga)	10,850
Kuni-Kamchatka Trench (West Pacific)	2,250		10,542
Philippine Trench (West Pacific)	1,325	Galathea Deep	10,539
Idzu-Bonin Trench (sometimes included in the Japan Trench)			9,810
New Hebrides Trench (South Pacific)	320+	North Trench	9,165
Solomon or New Britain Trench (South Pacific)	640		9,140
Puerto Rico Trench (West Atlantic)	800	Milwaukee Deep	8,648
Yap Trench (West Pacific)	560		8,527
Japan Trench (West Pacific)	1,600		8,412
South Sandwich Trench (South Atlantic)	965	Meteor Deep	8,263
Aleutian Trench (North Pacific)	3,200		8,100
Peru-Chile (Atacama) Trench (East Pacific)	3,540	Bartholomew Deep	8,064
Palau Trench (sometimes included in the Yap Trench)			8,050

13. Rivers, Lakes and Waterfalls

World's Largest River is South America's Amazon which flows into the South Atlantic. It is so regarded in view of the size and the volume of water it discharges into the sea.

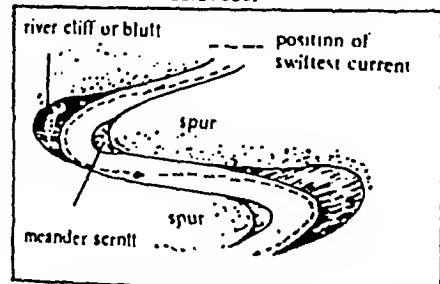
World's Longest River is Nile of Egypt which flows into the Mediterranean. It extends to 6,690 km.

Levee refers to the river bank formed by the accumulation of silt during flood or the embankment built by man.

Estuary refers to the single V-shaped mouth of a river when it merges into the sea. Being wide near the sea it is flushed by the waves and kept free from sediment deposits.

Delta is a triangular tract of land formed by the accumulation of silt at the river's mouth near the sea. It is so called because of its resemblance to the letter Δ (delta) of the Greek alphabet.

Meander refers to the zigzag course of the river, especially in the middle or lower stages. A meander is the result of lateral corrosion as the gradient of the river's course decreases.



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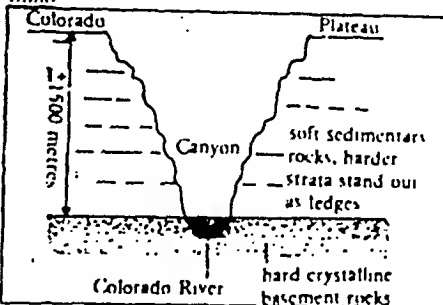
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World's Largest Delta is the Sunderbans Delta which is created in Bay of Bengal by the Ganges and Brahmaputra in West Bengal in India and Bangladesh. It covers an area of 75,000 sq km.

Gorge and Canyon is a very deep and steep-sided river valley with extremely steep wall. Canyon takes place in arid regions. A big sized gorge is called a canyon. The Grand Canyon of Colorado river in the USA, which has depth of

1,615 metres, is the longest canyon in the world.



SHORT-ANSWERED QUESTIONS

Q. How does a river work?

A. River is that mass of water which, while flowing on a slope along a definite course, makes rock fragments flow along with it.

Gravity makes the water flow from higher to lower levels. Rock fragments also flow along with the running water flowing in the natural setting. If the water flows in a more or less definite course, the mass of water is called river.

Q. What is a waterfall?

A. Waterfall is a steep fall or flow of water in a watercourse from a height. A waterfall occurs where alternating hard and soft strata outcrop, the softer material is eroded more quickly and a sharp change of gradient is created. A waterfall may also be the result of rejuvenation, caused by the re-establishment of vigorous vertical corrosion.

Q. Why are the rivers of northern India more important than those of southern India?

A. The rivers of northern India have a perennial source of water, which is utilised for irrigation and producing electricity. These rivers provide fertile soil and are good waterways for communication, etc. But the rivers of the Deccan are fed by the monsoons. Most of the year, they are mere trickles in beds of stone and sand.

PRINCIPAL RIVERS OF THE WORLD

River	Source	Outflow	Length km
Nile	Tributaries of Lake Victoria, Africa	Mediterranean Sea	6,690
Amazon	Glacier-fed lakes, Peru	Atlantic Ocean	6,296
Mississippi-Missouri-Red Rock	Source of Red Rock, Montana	Gulf of Mexico	6,240
Yangtze Kiang	Tibetan Plateau, China	China Sea	5,797
Ob	Altai Mts., USSR (now CIS)	Gulf of Ob	5,567
Yellow (Huang Ho)	Eastern part of Kunlun Mts., west China	Gulf of Chihli	4,667

SEAS

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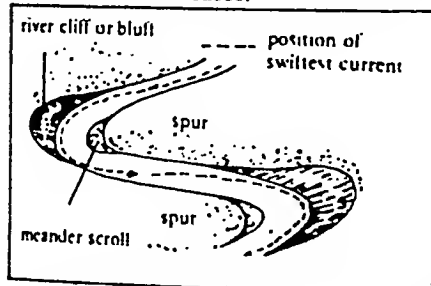
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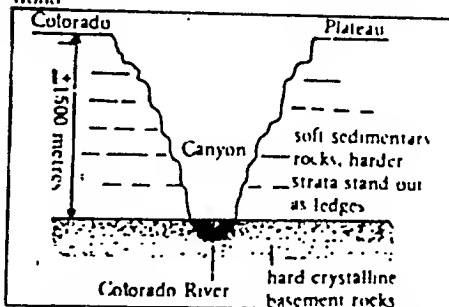
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River	Source	Outflow	Length km
Yenisei	Tannu-Ola Mts., western Tuva, USSR (now CIS)	Arctic Ocean	4,506
Parana	Confluence of Paranaiba and Grande rivers	Rio de la plata	4,498
Irish Congo	Atlat Mts., USSR (now CIS)	Ob River	4,438
	Confluence of Lualaba and Luapula rivers, Zaire	Atlantic Ocean	4,371
Amur	Confluence of Shilka (USSR - now CIS) and Argun (Manchuria) rivers	Tatar Strait	4,352
Lena	Baikal Mts., USSR (now CIS)	Arctic Ocean	4,268
Mackenzie	Head of Finlay river, British Columbia, Canada	Beaufort Sea (Arctic Ocean)	4,241
Niger	Guinea	Gulf of Guinea	4,184
Mekong	Tibetan highlands	South China Sea	4,023
Mississippi	Lake Itasca, Minnesota	Gulf of Mexico	3,779
Missouri	Confluence of Jefferson, Gallatin and Madison rivers, Montana	Mississippi River	3,726
Volga	Valdai plateau, USSR (now CIS)	Caspian Sea	3,687
Madeira	Confluence of Beni and Maumore rivers, Bolivia-Brazil boundary	Amazon River	3,238
Purus	Peruvian Andes	Amazon River	3,207
San Francisco	Southwest Minas Gerais, Brazil	Atlantic Ocean	3,198
Yukon	Junction of Lewis and Polly rivers, Yukon Territory, Canada	Bering Sea	3,185
St. Lawrence	Lake Ontario	Gulf of St. Lawrence	3,058
Rio Grande	San Juan Mts., Colorado	Gulf of Mexico	3,034
Brahmaputra	Himalayas	Ganges River	2,897
Indus	Himalayas	Arabian Sea	2,897
Danube	Black Forest, W Germany	Black Sea	2,842
Euphrates	Confluence of Murat Nehri and Kara Sun rivers Turkey	Shatt-al-Arab	2,799
Darling	Central part of Eastern Highlands, Australia	Murray River	2,739
Zambezi	11° 21'S, 24° 22'E, Zambia	Mozambique Channel	2,736
Tocantins	Goiás, Brazil	Para River	2,699
Murray	Australian Alps, New South Wales	Indian Ocean	2,589
Nelson	Head of Bow River, western Alberta, Canada	Hudson Bay	2,575
Paraguay	Mato Grosso, Brazil	Parana River	2,549
Ural	Southern Ural Mts., USSR (now CIS)	Caspian Sea	2,533
Ganges	Himalayas	Bay of Bengal	2,506
Amu Darya (Oxus)	Nicolas Range, Pamir Mts., USSR (now CIS)	Aral Sea	2,414
Japura	Andes, Colombia	Amazon River	2,414
Salween	Tibet, south of Kuntun Mts	Gulf of Maraban	2,414
Arkansas	Central Colorado	Mississippi River	2,348
Colorado	Grand Country, Colorado	Gulf of California	2,333
Dnieper	Valdai Hills, USSR (now CIS)	Black Sea	2,284
Ohio-Allegheny	Potter County, Pennsylvania	Mississippi River	2,102
Irrawaddy	Confluence of Nmai and Mali rivers, northeast Burma	Bay of Bengal	2,092

<i>River</i>	<i>Source</i>	<i>Outflow</i>	<i>Length km</i>
Orange	Lesotho	Atlantic Ocean	2,092
Orinoco	Serra Parima Mts., Venezuela	Atlantic Ocean	2,062
Pilcomayo	Andes Mts., Bolivia	Paraguay River	1,999
Xi Jiang (Si Kiang)	Eastern Yunnan Province, China	China Sea	1,989
Columbia	Columbia Lake, British Columbia, Canada	Pacific Ocean	1,983
Don	Tula, RSFSR, USSR (now CIS)	Sea of Azov	1,968
Sungari	China-North Korea boundary	Amur River	1,955
Saskatchewan	Canadian Rocky Mts.	Lake Winnipeg	1,939
Peace	Stikine Mts., British Columbia, Canada	Great Slave River	1,923
Tigris	Taurus Mts., Turkey	Shatt-al-Arab	1,899

LARGE LAKES OF THE WORLD

<i>Name and location</i>	<i>Area in sq km</i>	<i>Length in sq km</i>	<i>Maximum depth in metres</i>
Casplan Sea, CIS-Iran	394,299	1,199	946
Superior, USA-Canada	82,414	616	406
Victoria, Tanzania-Uganda	69,485	322	82
Aral, USSR (now CIS)	66,457	428	68
Huron, USA-Canada	59,596	397	229
Michigan, USA	58,016	517	281
Tanganyika, Tanzania-Zaire	32,893	676	1,435
Baikal, CIS	31,500	636	1,741
Great Bear, Canada	31,080	373	82
Nyasa, Malawi-Mozambique-Tanzania	30,044	579	706
Great Slave, Canada	28,930	480	614
Chad, Chad-Niger-Nigeria	25,760	—	7
Erie, USA-Canada	25,719	388	64
Winnipeg, Canada	23,553	425	62
Ontario, USA-Canada	19,477	311	237
Balkash, USSR (now CIS)	18,428	605	27
Ladoga, USSR (now CIS)	18,130	200	225
Onega, USSR (now CIS)	9,891	248	110
Titicaca, Bolivia-Peru	8,135	177	370
Nicaragua, Nicaragua	8,001	177	70
Athabaska, Canada	7,920	335	124
Rudolf, Kenya	6,405	248	—
Reindeer, Canada	6,330	245	—
Eyre, South Australia	6,216	209	varies
Issyk-Kul, USSR (now CIS)	6,200	182	700
Urmia, Iran	6,001	130	15
Torrens, South Australia	5,698	209	—
Vanern, Sweden	5,545	140	98
Winnipegosis, Canada	5,403	245	18
Nabuto Sese Seko, Uganda	5,299	161	55
Nettilling, Baffin Island, Canada	5,051	113	—
Nipigon, Canada	4,843	116	—
Manitoba, Canada	4,706	225	7
Great Salt, USA	4,662	121	5/8
Kloga, Uganda	4,403	80	9
Koko-Nor, China	4,222	106	—

WORLD'S GREATEST MANMADE LAKES

Name of dam	Location	Million cubic metres	Year completed
Owen Falls	Uganda	204,800	1954
Kariba	Zimbabwe	181,592	1959
Bratsk	USSR (now CIS)	169,270	1964
High Aswan (Sadd-el-Aali)	Egypt	168,000	1970
Akosombo	Ghana	148,000	1965
Daniel Johnson	Canada	141,851	1968
Guri (Raul Leonl)	Venezuela	136,000	1986
Krasnoyarsk	USSR (now CIS)	73,300	1967
Bennet W.A.C.	Canada	70,309	1967
Zeya	USSR (now CIS)	68,400	1978
Cabora Bassa	Mozambique	63,000	1974
La Grande 2	Canada	61,720	1982
La Grande 3	Canada	60,020	1982
Ust-Ilimsk	USSR (now CIS)	59,300	1980
Volga-V.I. Lenin	USSR (now CIS)	58,000	1955
Canlapišcau	Canada	53,790	1981
Pati (Chapeton)	Argentina	53,700	—
Upper Walnganga	India	50,700	—
Sao Felix	Brazil	50,600	—
Bukhtarma	USSR (now CIS)	49,740	1960
Ataturk (Karababa)	Turkey	48,000	—
Cerros Colorados	Argentina	48,000	1973
Irkutsk	USSR (now CIS)	46,000	1956
Tucurui	Brazil	36,375	1984
Vilyuy	USSR (now CIS)	35,900	1967
Sanmenxia	China	35,400	1960
Hoover	Nevada/Arizona	35,154	1936
Sobridinho	Brazil	34,200	1981
Glen Canyon	Arizona	33,304	1964
Jenpeg	Canada	31,790	1975

HIGHEST WATERFALLS OF THE WORLD

Waterfall	Location	River	Height in metres
Angel	Venezuela	Tributary of Caroni	1,000
Tugela	Natal, South Africa	Tugela	914
Cuquenán	Venezuela	Cuquenán	610
Sutherland	South Island, N Z	Arthur	580
Takkakaw	British Columbia	Tributary of Yoho	500
Ribbon (Yosemite)	California	Creek flowing into Yosemite	490
Upper Yosemite	California	Yosemite Creek, tributary of Merced	430
Gavarnle	Southwest France	Gave de Pau	420
Vellisfoss	Norway	Morkedola	360
Widows' Tears (Yosemite)	California	Tributary of Merced	350
Staubbach	Switzerland	Staubbach (Lauterbrunnen Valley)	300
Middle Cascade (Yosemite)	California	Yosemite Creek, tributary of Merced	220

<i>Waterfall</i>	<i>Location</i>	<i>River</i>	<i>Height in metres</i>
King Edward VIII	Guyana	Courantyne	259
Gersoppa	India	Sharavati	253
Kaiteuir	Guyana	Potaro	251
Skykje	Norway	In Skykjedal (valley of Inner Hardinger Fjord)	250
Kalambo	Tanzania-Zambia	—	219
Fairy (Mt. Rainier Park)	Washington	Stevens Creek	213
Aniene (Teverone)	Italy	Tiber	207
Cascata delle Marmore	Italy	Velino, tributary of Nera	199
Maradalsfos	Norway	Stream flowing into Ejksdalsvand (lake)	196
Feather	California	Fall River	195
Maletsunyane	Lesotho	Maletsunyane	192
Bridalveil (Yosemite)	California	Yosemite Creek	189
Multnomah	Oregon	Multnomah Creek	189
Voringsfos	Norway	Bjoreia	182
Nevada (Yosemite)	California	Merced	181
Skjeggedal	Norway	Tysso	160
Marina	Guyana	Tributary of Kunbrong, tributary of Potaro	152
Tequendama	Colombia	Funza, tributary of Magdalena	130
King George's	Cape of Good Hope, South Africa	Orange	122
Milouette	California	Milouette Creek, tributary of Merced	113
Victoria	Rhodesia-Zambia boundary	Zambezi	103
Handol	Sweden	Handol Creek	105
Lower Yosemite	California	Yosemite	93
Comet (Mt. Rainier Park)	Washington	Van Trump Creek	93
Vernal (Yosemite)	California	Merced	97
Virginia	Northwest Territories, Canada	South Nahanni, tributary of Mackenzie	96
Lower Yellowstone	Wyoming	Yellowstone	94

14. Major Riverside Cities

<i>City</i>	<i>River</i>	<i>Country</i>	<i>City</i>	<i>River</i>	<i>Country</i>
Alexandria	Nile	Egypt	Canton	Canton	China
Amsterdam	Amstel	Netherlands	Chittagong	Kamaphuli	Bangladesh
Antwerp	Scheldt	Belgium	Chungking	Yang-tse-Kiang	China
Ankara	Kizil	Turkey	Cologne	Rhine	Germany
Baghdad	Tigris	Iraq	Glasgow	Clyde	Scotland
Bangkok	Menam	Thailand	Hull	Humber	England
Belgrade	Danube	Yugoslavia	Hamburg	Elbe	Germany
Berlin	Spree	Germany	Karachi	Indus	Pakistan
Bonn	Rhine	Germany	Khartoum	Blue & White Nile	Sudan
Bristol	Avon	England	Lahore	Ravi	Pakistan
Budapest	Danube	Hungary	Lisbon	Tagus	Portugal
Cairo	Nile	Egypt	Liverpool	Mersey	England

City	River	Country
London	Thames	England
Montreal	Ottawa	Canada
Moscow	Moskva	Russia
Nanking	Yang-tse-Kiang	China
New Orleans	Mississippi	USA
New York	Hudson	USA
Paris	Seine	France
Philadelphia	Delaware	USA

City	River	Country
Quebec	St. Lawrence	Canada
Rangoon	Irawadi	Burma
Rome	Tiber	Italy
Shanghai	Yang-tse-Kiang	China
Tokyo	Sumida	Japan
Vienna	Danube	Austria
Warsaw	Vistula	Poland
Washington	Potomac	USA

INDIA'S CITIES, RIVERS, STATES

City	River	State
Agra	Yamuna	U.P.
Ahmedabad	Sabarmati	Gujarat
Ayodhya	Saryu	U.P.
Badrinath	Ganges	U.P.
Calcutta	Hooghly	West Bengal
Cuttack	Mahanadi	Orissa
Delhi	Yamuna	Delhi
Dibrugarh	Brahmaputra	Assam
Ferozepur	Sutlej	Punjab
Guwahati	Brahmaputra	Assam
Hardwar	Ganges	U.P.
Hyderabad	Musi	Andhra Pradesh
Jabalpur	Narmada	M.P.

City	River	State
Kanpur	Ganges	U.P.
Kota	Chambal	Rajasthan
Lucknow	Gomti	Uttar Pradesh
Ludhiana	Sutlej	Punjab
Nasik	Godavari	Maharashtra
Pandharpur	Bhima	Maharashtra
Patna	Ganga	Bihar
Sambalpur	Mahanadi	Orissa
Shrinagar	Jhelum	J. & K.
Surat	Tapti	Gujarat
Tiruchirappalli	Cauvery	Tamil Nadu
Varanasi	Ganges	U.P.
Vijayawada	Krishna	Andhra Pradesh

RIVERS FLOWING INTO LAKES

River	Lake	Country
Volga	Caspian Sea	USSR (now CIS)
Ural	Caspian Sea	USSR (now CIS)
Jordan	Dead Sea	West Asia

15. Atmosphere

The thin gaseous envelope surrounding the Earth is called atmosphere. It contains about 5,000 million tonnes of gases, a small amount of water vapour and some dust particles. A column of air weighing about one tonne is pressing downwards on our shoulders, but we do not feel this pressure as it is counterbalanced by the same pressure from within our bodies.

The dry air of the atmosphere comprises of nitrogen (78.09 per cent), oxygen (20.95 per cent) and argon (0.93 per cent). Besides, there are minute proportions of other gases, including carbon dioxide, helium, methane, hydrogen, ozone, neon, xenon, etc. The amount of carbon dioxide varies

from place to place, being greatest around the cities and smallest in the countryside. Atmosphere also contains tiny particles of dust and some other substances. There are also varying amounts of water vapour, evaporated from the surface of the Earth and the oceans.

About 5/6th of the total mass of atmosphere and almost all the water vapour is confined to the lowest layer of atmosphere, called the troposphere. Most of the weather that we experience, originates from this zone. The temperature in the troposphere decreases upward till the tropopause, which is the upper limit of the troposphere. Above this, there is lower atmosphere where conditions are relative

calm and, therefore, the jet aircrafts often fly there. However, in the upper stratosphere, strong winds blow. Beyond stratosphere is the ionosphere where temperature decreases sharply; it is -70°C at a height of about 80 km above the sea level. Then the temperature starts rising sharply, reaching almost $2,000^{\circ}\text{C}$ at a height of 400 km above the sea level. The ionosphere is so named because the thinly distributed gas molecules are ionised or electrically charged.

The atmosphere is essential for life on Earth. Oxygen and carbon dioxide in the atmosphere are necessary for animal and plant life. The ozone layer in the stratosphere protects life on Earth by absorbing most of the sun's harmful radiation. The general circulation of atmosphere redistributes heat on the globe, thus performing the functions of a giant thermostat.

Atmospheric Layers are layers of air adjacent or above the Earth's surface. The atmosphere has been divided into sub-spheres according to the general characteristics of temperature variations. The different atmospheric layers are:

(a) Troposphere (b) Tropopause (c) Stratosphere (d) Mesosphere (e) Ionosphere (f) Thermosphere and (g) Exosphere.

(a) **Troposphere** is nearest to the Earth's surface and extends to a distance of about 11 kilometres. In troposphere, generally, the temperature decreases as height increases. It is the densest of all layers and contains water vapours, moisture and dust. It also profoundly influences Earth's climate since 80 per cent of the mass of air comprising the entire atmosphere is concentrated in this zone.

(b) **Tropopause** refers to the boundary region which separates troposphere from the adjoining atmospheric layer known as stratosphere.

(c) **Stratosphere** is a region of uniform temperature extending from an altitude of about 11 km above the Earth to a height of nearly 30 km. It is free from water vapour, clouds and dust. The upper part of stratosphere has plenty of ozone which affords protection to human beings on the Earth against the fatal effects of solar ultraviolet radiations.

(d) **Mesosphere** is a very cold region above the ozone rich layer of stratosphere.

(e) **Ionosphere** which comes immediately above mesosphere, extends from about 50 km to 500 km above the Earth. It includes the thermosphere and exosphere. The region contains ionised or electrically charged air and reflects radio waves facilitating wireless communication, between distant places. The ionised air also protects those on Earth

from the falling meteorites, most of which are made to burn out at this region.

(f) **Thermosphere** constitutes the middle layer of ionosphere and has a temperature of 212°F or 100°C .

(g) **Exosphere** is the uppermost region of the atmosphere, where the air density is so low that an air molecule, moving rapidly straight upward, is more than 50 per cent likely to escape from the atmosphere instead of hitting other molecules.

GEOGRAPHICAL TERMINOLOGY

Latitude and Temperature : Over the equatorial region the Sun's rays fall vertically and as one moves away from the equator towards the poles, they become more and more slanting. Therefore, the equatorial and tropical regions are hot and polar regions cold.

Altitude and Temperature : As one moves above the Earth from the sea level, the atmosphere becomes progressively rarified, rendering the one at high altitudes incapable of absorbing much heat. Therefore, as the height increases, the temperature decreases, at the rate of 1° for every 300 feet above sea level.

Isobars refer to lines drawn on a map, joining places with the same atmospheric pressure at a given specific time. To obtain proper comparison of the pressure at different places the readings should be reduced to mean sea level.

Isohyets are lines on a meteorological map joining places of equal monthly or yearly rainfall.

Isotherms are lines on a meteorological map joining places of equal temperature.

Doldrums (also known as equatorial calms) are belts of low atmospheric pressure obtained in the regions adjoining the equator to a distance of 5° latitude toward the north and south. Due to the meeting of the north-east and south-east trade winds, this region enjoys almost absolute calm and light surface winds. The excess heat causes heavy evaporation, upward movement of air, formation of dense clouds and heavy rains throughout the year.

Trade Winds occur on either side of the doldrums between 10° and 30° north and south. The trade winds are caused by the inflow and movement of air along the Earth's surface to the equator. The inflow occurs because of continuous rise of air to high altitudes in the doldrums. These trade winds have been of great advantage to by the commerce of the world. The days who gave them the name.

Gale is the name given to a strong wind blowing at a speed between 50 km and 100 km per hour.

Storm refers to the strong wind whose speed varies between 72 km and 121 km per hour.

Hurricane denotes the strong wind whose speed exceeds 121 km per hour.

Tornado is the name given to the violent storm occurring in North America. It is generally accompanied by torrential rains and produces water spouts in the sea, which are extremely dangerous to ships.

Water Spout is a tornado occurring in the sea which connects a whirling cone of dense cloud with a cone of spray raised from sea and thus raises a huge column of water. This is several hundred metres high. It is very dangerous for ships.

Bora is the name given to the cold dry wind experienced particularly in winter along the eastern coast of the Atlantic Ocean and in northern Italy.

Cyclone is wind rotating round the centre of minimum of low barometric pressure. The winds rush inwards from all directions. Due to the inclination of Earth's axis and the rotation of the earth, in northern hemisphere the wind circulates in an anticlockwise direction and in the southern hemisphere in clockwise direction.

Anticyclone refers to the region in which the atmospheric pressure is high, with the highest point at the centre. In this situation the winds blow spirally outwards from the centre, clockwise in northern hemisphere and anticlockwise in southern hemisphere. In summer anticyclones are associated with warm and sunny conditions; in winter they imply frost and fog as well as sunshine.

Typhoon refers to the tropical cyclone which generally occurs in late summer or early autumn in the China Sea. It is characterised by high velocity winds and torrential rains.

Climatic Zones are the broad climatic divisions of the Earth based on general variation of temperature from the equator to the poles. There are three kinds of zones which are:

(a) **Torrid Zone** The regions extending from the equator to the tropic on both the hemispheres are called the torrid or tropical zones.

(b) **Temperate Zone** The regions extending beyond the torrid zones and leading up to the Arctic Circle in the north and Antarctic Circle in the south are temperate zones.

(c) **Frigid Zone** The regions adjoining the poles within Arctic and Antarctic Circles are called the frigid zones.

Savanna is the equatorial forest region of the Amazon river basin in South America.

Savanna Type Region refers to the regions of tropical grasslands found on the belts adjoining

both sides of the equator. It is characterised by thick evergreen forests, high temperatures and heavy summer rains. Sudan, Zimbabwe (Rhodesia), Orinoco river basin and Brazilian highlands come under this category.

Savanna denotes tropical grassland in general and is the result of heavy rains and high temperature associated with the equatorial belt. In South Africa, it is known as "Bush Veld" and in North Africa "Sudan". The Savannas of Orinoco basin are called "Llanos".

Deciduous Forests are forests with trees which shed their leaves seasonally.

Fauna denotes the animal kingdom found in particular geographical region.

Flora denotes collectively the plant life of a country or a particular region.

Fossil refers to the organic remains of animals which have remained preserved in rocks.

Tundras is the belt of treeless cold desert, which remains under heavy snow during most of the year in the Arctic Circle in Asia, Europe and North America. No such belt exists in the southern hemisphere. Its inhabitants are known as "Eskimos".

Igloos are the dwellings of the Eskimos, dug half underground and covered with blocks of ice. These are dome-shaped huts.

Midnight Sun refers to the Sun visible at nights in mid-summer in Arctic and Antarctic regions. As the Sun is then visible at midnight, it has been termed as "midnight Sun".

Aurora Borealis (also called "northern lights") refers to a broad display of rather faint light in the northern skies at night. It is a phenomenon of coloured lights in the northern hemisphere, mainly visible at higher altitudes.

Aurora Australis refers to a phenomenon similar to aurora borealis occurring in the southern hemisphere.

White out is caused when land is totally covered by snow and the intensity of the light refracted off it may be the same as that refracted off overhead clouds. This results in the obliteration of the horizon and makes land and sky indistinguishable. Such phenomenon is called "white out".

Halo occurs when the sun's light is refracted by ice crystals in Cirrus and Cirrostratus clouds and a bright ring of light, usually reddish on the inside and white on the outside, may be seen round the sun with a 22° radius. This phenomenon is called "halo". Halo can also be seen around the moon under similar conditions.

Corona is a phenomenon seen around the sun or moon. It occurs when the sun's or moon's light

is retracted by water droplets in some types of cloud. Then a ring of light (sometimes two or more rings of light) can be seen closely and concentrically around the sun or moon.

Glory is a ring of light seen round the head of one's own shadow cast at a time when the person stands with his back to the sun and looks down from higher ground on to a lower bank of fog or cloud. The shadow is then called a "broken spectre".

SHORT-ANSWERED QUESTIONS

Q. How do Oceans and Seas Influence temperature?

A. The land absorbs and radiates heat quicker than water. Besides, water also has the capacity to retain the heat for periods longer than land. In summer land becomes quickly heated up, the cool air from the ocean blows towards it. During winter when the land becomes rapidly cold, the cold air rushes out to the sea which is warm, thereby enabling the temperature to go up. Thus places near sea and ocean enjoy moderate temperature as compared to interior regions at the same latitudes.

Q. What are Trade Winds?

A. These are the winds which blow towards equator. They blow between 5 degrees and 30 degrees north and 5 degrees and 30 degrees south latitude. These are also called anti-trade winds.

Q. What do you know about Ferrel's Law?

A. It states that all fluids, e.g., winds, currents, etc., turn to their right in the northern hemisphere and to their left in the southern hemisphere.

Q. Write short notes on :

(i) Roaring Forties (ii) Horse Latitudes.

A. (i) Roaring Forties : These are steady north-west anti-trade winds between latitude 45 to 50 degrees south.

(ii) Horse Latitudes : The sub-tropical zone of high pressure on either side of the equator close to latitudes 30° north and 30° south are known as Horse Latitudes. They lie between the trade winds and the westerlies and are marked by light winds or calms, and light rainfall. The origin of this term is obscure. It is said that the sailing ships carrying horses to the West Indies were often becalmed between 30 degrees north and 30 degrees south and the sailors of becalmed ships were obliged to throw all the horses overboard to save valuable drinking water and then the ships could move. This part, therefore, came to be called Horse Latitudes. But now both tropics of calm are known by this name.

Q. What is the difference between sea breeze and land breeze?

A. Sea breeze : These are the winds blowing during the day from sea towards land which is comparatively hotter than sea. This is due to the fact that during the day there is high pressure on sea and low pressure on the land and the wind blows from high pressure to low pressure.

Land breeze : These are the winds which blow during the night from land to sea, as a result of the fact that land heats and cools more rapidly than the sea. Faster cooling of the land at night causes higher pressures over the land, so that air flows out to the sea.

Q. Write short notes on:

(i) Fog (ii) Mist (iii) Clouds (iv) Hail (v) Snow (vi) Dew (vii) Frost.

A. (i) Fog : When moist air meets cold surface of earth, some of the water vapours condense on the particles of dust in air. This cloud of condensed vapour is called fog.

(ii) Mist : Mist and fog are identical and are formed in the same way, the only difference being that in a fog the particles of water are smaller and the visibility is poorer than in a mist.

(iii) Clouds : Clouds and fog are identical and are formed alike, the only difference being that clouds are formed in the upper regions of the atmosphere and adopt many different shapes.

(iv) Hail : When raindrops on their way to the Earth are carried upward by currents into colder regions, they freeze and become hail. When too heavy to be sustained by upward air currents, they fall as a hailstorm.

(v) Snow : It is precipitation in the form of delicate, feathery ice crystals. When the clouds ascend to atmosphere, they freeze without passing through the liquid form and fall as snow.

(vi) Dew : It means atmospheric vapour condensed in small drops on cool surface from evening to morning.

(vii) Frost : It is the frozen dew. In cold countries when the temperature of the surface of air falls below 0 degree Centigrade (32 degree Fahrenheit) at night, the dew drops freeze and become frost.

Q. What is the difference between ice and snow?

A. Ice is frozen water, while snow is the atmospheric vapour frozen into ice crystals and falling to Earth in white flakes.

Q. What are clouds?

A. Clouds are a visible collection of particles of water or ice suspended in the air. They are usually at an elevation above the earth's surface. They appear white as the sunlight reflects from them,

though their shaded sides are grey or black when they are dense. We can observe whether they are building or dispersing by observing movement at their edges. Their forms tell us much about atmospheric conditions and probable weather changes and it is useful to recognise their appearance and the conditions under which they form.

Q. What are cyclones and what are their types?

A. A cyclone is a large-scale, atmospheric wind-and-pressure system characterised by low pressure at its centre and by circular wind motion, counterclockwise in the northern hemisphere, clockwise in the southern hemisphere.

Cyclones constitute the most fundamental and climatically the most significant atmospheric disturbances. On the basis of the areas of their origin, cyclones are classified into two types: (i) temperate and (ii) tropical.

Temperate Cyclones : Cyclones are areas of low pressure. A centre of low pressure is surrounded by closed, concentric isobars, which indicate the movement of the winds towards the centre from all the quadrant and cardinal directions. Cyclones develop in areas of air-mass conflict and well-developed fronts. Temperate cyclones are concentrated in the middle latitudes between 35° and 65° .

Tropical Cyclones : Hurricanes or typhoons are the well-known tropical cyclones. They are notorious for their violence and for causing widespread destruction.

Hurricanes develop and mature over water bodies only. Hence their major climatic significance is causing widespread rainfall. Most of the hurricanes develop in a belt of 8° to 15° north and south latitudes.

Q. What is the difference between dew, fog and hoarfrost?

A. Dew is the atmospheric vapour condensed in small drops on cool surface from evening to morning. Fog is caused when moist air meets cold surface of earth and some of the water vapours condense on the particles of dust in air. The frozen dew is called hoarfrost.

Q. What is the difference between weather and climate?

A. Weather is the sum total of atmospheric conditions existing at any place at a particular instant of time. These conditions are expressed by a combination of several elements. The primary elements are (i) temperature and (ii) humidity and precipitation.

Climate is an aggregate of the changing daily weather conditions. It refers to longer periods of time. The periods of time may be long and they

may refer to the periods as old as the Pleistocene in geology or the last 500 years of human history or any reasonable recent span of time.

The basic difference between weather and climate is that the former refers to a short and the latter to a much longer period.

Q. Write a short note on monsoons?

A. These are the seasonal winds, which blow during the six months of summer from ocean to land and for the six months of winter from land to sea. This is due to the fact that during summer, when rays of the Sun fall vertically over the Tropic of Cancer, the land becomes comparatively hotter than the sea. Therefore, the winds come from sea. Reverse is the case in winter. India receives 90 per cent of total rainfall from these winds.

Q. What are the factors on which rainfall of a place depends?

A. The rainfall at a place depends upon the following :

(i) **Distance from Equator :** There is a high temperature near the equator all the year round. The air is heated and it picks up a great deal of moisture. The hot and moist air is very light and rises up. In the upper regions, it is cooled and hence condensation takes place. Thus there is heavy rainfall.

(ii) **Nearness from Sea :** Winds coming from the sea are moisture laden. As they blow farther away from the shore, they go on losing their moisture. Hence places near the sea have more rainfall than places farther inland. For example, Mumbai has more rainfall than Nagpur.

(iii) **Direction of Mountains :** If mountains lie parallel to the direction of winds, the winds pass on without shedding any rain. For example, Aravalli Hills in Rajasthan lie parallel to the direction of the winds. Hence Rajasthan receives little rain.

(iv) **Direction of Winds :** Sea winds blowing over sea bring rain while winds blowing over land are dry. Moreover, if the moisture laden winds blow from hot to cold regions, condensation takes place and rain falls.

(v) **Forests :** Forests are reservoirs of water, hence evaporation takes place freely. At the same time forests cool the air and so help condensation. Hence forest areas have more rainfall.

(vi) **Warm currents :** When winds blow over warm currents, they pick up moisture. When these moisture laden winds strike against mountains, they rise and cause rain.

Q. What is a rain shadow region?

A. Rain shadow region is just on the opposite of windward side of the mountain and hence receives little or no rain, e.g., western coast receives heavy rainfall, while the Deccan plateau receives little rainfall, as the latter is in the rain shadow region.

Q. Why is there heavy rainfall on west coast and only scanty rainfall in the Deccan plateau?

A. The summer monsoons blowing from the Arabian Sea strike against the Western Ghats and cause heavy rains on the west coast. Deccan plateau is situated in the rain shadow of the Western Ghats. It, therefore, receives scanty rain.

Q. What is humidity?

A. Air is made up of a number of different gases such as oxygen, nitrogen, carbon dioxide, etc. One of the important components of air is the evaporated water or water vapour. The amount of water vapour that air can hold at any time is determined by the temperature. Higher the temperature, more water vapour the air can hold. When air cannot take any more water vapour, the saturation point is reached. And if any more water vapour is added, condensation takes place which results in rain, hail, mist, dew or snow.

Humidity simply means the amount of water vapour in the air at any given point of time. Absolute humidity refers to the weight of water vapour per cubic foot of air. Relative humidity refers to the percentage of water vapour in the air with respect to the total amount of vapour that the air can hold at any given time and at given temperature. Thus when we say that temperature is 36°C and relative humidity is 75, what we mean is that air has 75 per cent of water vapour that it can hold at the temperature of 36°C . Since our body needs some water vapour, very dry air may cause us discomfort. But excessive humidity along with high temperature is also a source of discomfort. We are most comfortable when humidity is neither too high nor too low.

Q. What are winds and define important Wind Systems of the World?

A. Wind is the movement of the air caused by air rising or sinking. The chief cause of winds is difference in pressure. Air always moves from region of high pressure to a region of low pressure (to equalise the pressure). For example *Doldrums* are the low pressure belt round the equator and is a region of calm with no regular winds but violent squalls and thunderstorms are frequent there which come from high pressure areas north and south of the equator.

As the Earth is rotating on its axis from west to east, all winds are deflected. According to the Ferret's law, winds are deflected to the right in the Northern Hemisphere and to the left in the Southern Hemisphere.

Important wind systems of the world are:

(a) *Polar Winds*: The winds which blow from the high pressure area around the poles towards the temperate regions are known as polar winds. They rise from the north west in the northern hemisphere and from the south east in the southern hemisphere and are extremely cold.

(b) *Trade winds*: Trade winds refer to the winds that blow from the sub-tropical belts of high pressure towards the equatorial region of low pressure, from the north-east in the northern hemisphere and from the south-east in the southern hemisphere. In many areas they blow with extreme regularity throughout the year, particularly over the oceans and get their name from the nautical expression 'to blow trade' meaning 'to blow along a regular track'.

(c) *Westerlies (or Anti-Trade Winds)*: They are winds which blow from about 40° degrees N to the Arctic Circle and from about 35° degrees S to the Antarctic Circle throughout the year. They derive their name from the direction in which they blow. In the northern hemisphere they blow in the south westerly direction and bring winter rain to Mediterranean regions etc. In the southern hemisphere, they blow in a north-westerly direction.

(d) *Variable Winds*: are the irregular winds as *Cyclones* and *Anti-Cyclones*.

(e) *Periodical Winds*: These are (i) *Land and Sea Breezes* and (ii) *Monsoons* which blow in one direction at a particular time or during a particular season. In the hot season in India, the sun shines vertically over the Tropic of Cancer, i.e., roughly over the great plains of the Ganges and Brahmaputra so that the air over the plains becomes very hot by about the month of May. At this time, south west monsoon commences to blow. They bring heavy rains. Monsoon winds prevail over India at different seasons. India depends on the rain-bearing south-west winds which prevail from about the end of May to the end of September.

16. Miscellaneous Facts

IMPORTANT BOUNDARY LINES

Durand Line: Boundary between India and Afghanistan demarcated by Sir Mortimer Durand in 1896

Hindenberg Line: The line to which the Germans retreated in 1917 during the World War first, defines the boundary between Germany and Poland.

McMahon Line: The boundary between China and India as demarcated by Sir Henry McMahon; China does not recognise this line.

Magnot Line: Boundary between France and Germany.

Oder Niesse Line: The boundary between East Germany and Poland.

Radcliffe Line: Drawn by Sir Cynl Radcliffe in 1947, it demarcates the boundary of India and Pakistan.

Siegfried Line: It is the line of fortification drawn up by Germany on her borders with France.

17th Parallel: The line which delimited the boundary between North Vietnam and South Vietnam before the two were united

38th Parallel: The boundary line between North Korea and South Korea

49th Parallel: The boundary line between USA and Canada.

IMPORTANT LINES ON THE MAP

Isopleth: A line drawn on the map along which the value of a particular phenomenon or product is uniform.

Isonomal: Any line representing continuous value on maps.

Isobars: Lines of equal pressure.

Isobaths : Lines of equal depth in the sea.

Isobronts: Lines joining places experiencing a thunderstorm at the same time.

Isochrones: Lines joining places located at equal travel time from a common centre.

Isogonals: Lines joining places with the same magnetic declination.

Isosalines: Isopleths of salinity.

Isohyet: Isopleth of rainfall.

Isohypse: (Or contour lines) Isopleths of elevation above sea level.

Isonif: Isopleth of amount of snow.

Isophene: Isopleth of seasonal phenomena, e.g. the flowering dates of plants.

Isorymes: Lines of equal frost.

Isoseismals: Lines of equal seismic activity

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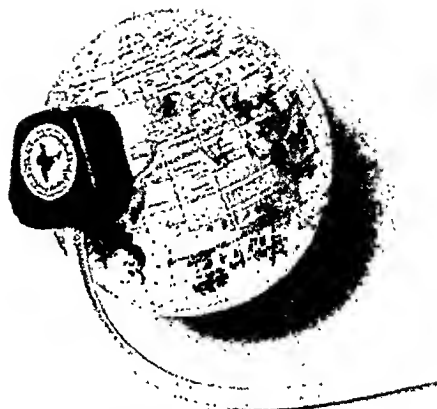
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Part V

The World We Live In

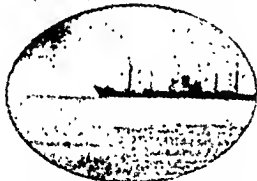
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1. The World

The estimated total surface area of the Earth is 510,100,448 square kilometre, of which the sea or hydrosphere covers five-sevenths, or more accurately, 70.78 per cent (361,059,226 square kilometre) and the land or lithosphere two-sevenths or 29.22 per cent (149,041,182 square kilometre). The Earth has a mass of about 5.862×10^{21} tons (estimated) and has a density 5.515 times that of water (or 5.517 kg/litre). The equatorial circumference of the earth is 40,075.03 kilometre with a polar or meridional circumference of 40,007.69 kilometre indicating that the earth is not a true sphere but an ellipsoid, flattened at the poles. The earth also has a slight ellipticity at the equator.

Population : According to the United Nations statistics, the world's population rose from 5.575 billion in mid-1993 to an estimated 5.804 billion in 1995 and to 5.9 billion in mid-1998. It touched the 6 billion mark on October 12, 1999 (double the 1950 mark) and is expected to soar to 6.28 billion by 2000 and to 8.5 billion by 2025. At the beginning of the century, the world population was 1.663 billion.

Population growth has accelerated during modern history. The 1 billion level was not reached until 1850 and that figure did not double until 1930. Thirty years later, another billion people were sharing the planet and fourteen years after that in 1974 the world population soared to 4 billion. The 5 billion mark was reached in 1987 when the first World Population Day was celebrated to build awareness of population issues and to highlight the impact they have on development and the environment.

The average daily increase in the world's population has been estimated at about 256,000 or an average of approximately 178 per minute.

The all-time peak annual increase of 2.06 per cent in the period 1965-70 declined to 1.74 per cent by 1985-90. By 2025 this should decline to 0.99 per cent. In spite of the reduced percentage increase, world population is currently growing by more than 93 million every year. Projections issued by the United Nations have estimated that the population would stabilise at around 11.6 billion in around 2150.

The crude birth rate—the number of births per 1,000 population—for the whole world was estimated to be 27.0 per 1,000 in 1985-90. The highest rate estimated by the United Nations for 1985-90 was 55.6 per 1,000 for Malawi. Excluding

the Vatican City, where the rate is negligible, the lowest recorded rate was 9.5 per 1,000 for San Marino for the same period.

The crude death rate—the number of deaths per 1,000 population of all ages—for the whole world was an estimated 9.7 per 1,000 in 1985-90. East Timor had a rate of 45.0 per 1,000 from 1975-80, although this had declined to 21.5 in 1985-90. The highest estimated rate in the same period was 23.4 for Sierra Leone. The lowest estimated rate for 1985-90 was 3.5 deaths for 1,000 for Bahrain.

The rate of natural increase for the whole world was estimated to be 17.3 (27.0 births less 9.7 deaths) per 1,000 in 1985-90 compared with a peak 20.6 per 1,000 in 1965-70. The highest of the latest available recorded rates was 37.4 (43.0 less 5.6) for Oman in 1985-90. The lowest rate of natural increase in any major independent country in recent times was in Hungary, which actually experienced a population decline in 1985-90 with a figure of -1.7 per 1,000 (11.9 births and 13.6 deaths).

Current growth patterns lead forecasters to conclude that while growth rates are falling and in some cases approaching zero in industrialised nations, population in less developed regions will double in 41 years and in least developed country in 27 years.

There are estimated to be 1,014 males in the world for every 1,000 females. The country with the largest recorded shortage of women is the United Arab Emirates, which has an estimated 484 to every 1,000 males. The country with the largest recorded shortage of males is Ukraine, with an estimated 1,154 females to every 1,000 males.

Most populous country : The largest population of any country is that of China, which has massive share of the world's population—about 25 per cent. The rate of natural increase in the People's Republic of China is now estimated to be 37.000 a day or 13.6 million per year. In mid-1997, the population of China was estimated to be 1.22 billion.

Least populous country : The independent State with the smallest population is the Vatican City or the Holy See, with 850 inhabitants (est mid-1997).

Most densely populated : The most densely populated territory in the world is the Portuguese province of Macau on the southern coast of China. It has an estimated population of 378,000

(mid-1993 estimate) In an area of 18 square kilometres giving a density of 21,000 per square kilometre.

Number of countries: The world comprises of 191 sovereign countries and 65 non-sovereign or other territories (dependencies of sovereign states, territories claimed in Antarctica and disputed territories), making a total of 256 as in April 1994.

Largest country: The country with the greatest area is Russia, with a total area of 17,075,200 sq km, or 11.5 per cent of the world's total land area. It is 70 times larger than U.K., but with a population of 147 million (est. mid-1997) has only 2.57 times more people than the U.K.

Smallest country: The smallest independent country in the world is the State of the Vatican City or Holy See, which was made an enclave within the city of Rome, Italy on February 11, 1929. The enclave has an area of 0.44 sq km.

Smallest republic: The world's smallest republic is Nauru, less than one degree south of the equator in the Western Pacific, which became independent on January 31, 1968. It has an area of 2,129 hectares and a population of 10,390 (latest estimate mid-1997).

Smallest colony: The smallest colony in the world is Gibraltar (since 1969, the city of Gibraltar), with an area of 5.8 square kilometres. Pitcairn Island, the only inhabited (55 people in late-1993) island of a group of four (total area 4 square kilometres) has an area of 388 hectares (960 acres)

Most populous city: The most populous urban agglomeration in the world is Tokyo, which was listed in the United Nations *Prospects of World Urbanisation 1992* as having a population of 25,000,000. By 2000 this is expected to increase to 28,000,000.

Largest city: The world's largest city, in area, is Mount Isa, Queensland, Australia which has an administered area of 41,225 square kilometres.

Highest capital: The highest capital in the world, before the domination of Tibet by China, was Lhasa, at an elevation of 3,684 metres above sea level. La Paz, the administrative and *de facto* capital of Bolivia, stands at an altitude of 3,631 metres above sea level.

Highest town: Wenchuan, the new town founded in 1955 on the Chinghai-Tibet road, located north of the Tangle range in China at 5,100 metres above sea level, is the highest town in the world.

Least populous town: China, the world's most populous country, has what may be the world's least populous town. Yumen, in the remote Himalayan region of Tibet, has only three residents, an elderly father and his two daughters. The town has a township Government, an administrative head, an official seal and an emblem. The father, Sangqu, 72, has retired as the town head and has been succeeded by his older daughter Zhuoga. The remote town lies 550 km southeast of the capital, Lhasa. Dozens of families once lived in Yumen, but slowly they all moved away. By 1989, only Sangqu's family was left.

2. The Continents

ASIA

Asia, the largest continent, extends over nearly one-third (30%) of the land surface of the earth. Area: 43,999,000 sq km. Population: (est. 1998) 3,539.9 million (62.4% of the world total). Chief Mountain Ranges: Himalayas, Kunlun, Tien Shah, Altai, Tibetan Plateau. Chief Rivers: Ganges, Yangtze, Yamuna, Yenisei, Amur, Hwang-ho, Mekong. Deserts: Arabia, Thar. Climate: Very varied, extreme in north, monsoonal in the south and east. Minerals: Gold, coal, oil, iron, manganese. Principal Countries in Asia: India, Iran, Iraq, Israel, Jordan, Pakistan, Sri Lanka, Myanmar (Burma), China, Vietnam, Indonesia, Malaysia, Japan, Bangladesh. Important Cities: New Delhi, Mumbai, Tokyo, Dhaka, Beijing, Yanchon (Bangkok), Bangkok, Colombo (Sri Jayawardenepura Kotte), Hanoi, Tashkent, Singapore, Jakarta, Kuala Lumpur.

AFRICA

Africa, the second largest continent, bounded by Mediterranean Sea on the north, by Red Sea and Indian Ocean in the east and by Atlantic Ocean in the west, adjoins Asia and Isthmus of Suez. Area: (approx. 29,800,000) sq km (20.4% of the world). Population: (1998) 778.5 million (13.2%). Principal Countries: Egypt, Libya, Algeria, Morocco, Niger, Chad, Sudan, Ethiopia, Kenya, Somalia, Congo, Zambia, South Africa, Nigeria, Angola. There are deserts in north, forests in centre and lofty plateaus in the south. Highest Mountain: Kilimanjaro 5,895 metres. Chief Rivers: Nile, Congo, Niger, Zambezi. Largest Lake: Victoria, Great Rift valley in East Africa. Rainfall: Heavy near equator, almost rainless in Sahara and Kalahari, elsewhere moderate. Agriculture: Wine olives, wheat, esparto grass in north; cocoa, oil palm, groundnut, coffee, cotton in centre;

wheat, maize, wool in south. Minerals : Gold, diamonds, copper. Important Cities : Cairo, Lusaka, Cape Town, Mombasa, Nairobi, Addis Ababa, Harare, Cape Town, Pretoria.

EUROPE

Europe. Area: (approx.) 9,700,000 sq km (7.1%); greatest length north to south 3,860 km; breadth east to west 5,300 km. Population: (1998) 729.4 million (9.6%). Chief Mountains : Alps, Pyrenes, Carpathians, Balkans, Apennines, Sierra Nevada, Urals, Caucasus. Chief Rivers : Volga, Danube, Rhine, Dnieper, Ural, Don. Chief Lakes : Ladoga, Onega, Peipus, Vanem, Vaitem. Climate : Arctic border, long cold winter; short cool summer; snow. Chief Industries: Agriculture—cereals, fruits, sugarbeet, potato, wax, hemp, pastoral—cattle-rearing, dairying, fishing, forestry, wood, pulp, paper, iron, coal, petroleum, hydroelectric power, etc. Principal Countries: U.K., France, Germany, Poland, Czechoslovakia (Czech and Slovak Federative Republics), Hungary, Norway, Sweden, Portugal, Italy, Spain, Switzerland, Russia, Austria, Romania. Important Cities: Bern, Paris, Berlin, London, Bonn, Vienna, Munich, Prague, Warsaw, Rome, Budapest, Stockholm, Moscow, Belgrade, Madrid, Oslo.

NORTH AMERICA

North America, northern continent of Western Hemisphere, comprising U.S.A., Canada, Central America and the Caribbean, on west high chain of mountains, lower range in east and central plains. Climate varies considerably owing to wide range of latitude and altitude. Area: 24,235,000 sq km (16.3%). Population: (1998) 471.7 million (8.4%). Agriculture : Temperate and tropical products, cereals, tobacco, sugarbeet, potatoes, etc., lumbering, rich in minerals, coal, petroleum, iron, manganese, etc. General Industries: Shipbuilding. Occupied formerly by Red Indians; now mainly by white races with many Negroes in south. Important Cities: New York, Washington, D.C., San Francisco, Chicago, Mexico, Montreal, Ottawa, Jamaica.

SOUTH AMERICA

South America, southern continent of Western Hemisphere including Argentina, Bolivia, Brazil,

Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela and Guyana. Area : 17,599,000 sq km (12.0%). Population : (1998) 332.7 million (5.9 per cent of world's total). Climate : Diverse, varying with latitude and altitude, equatorial, hot and wet. Atacama, a rainless desert on middle west coast in south temperate. Chief Industries : Tropical agriculture: cocoa, coffee, sugarcane, rubber, cereals. Minerals: Gold, silver, copper, tin, diamonds, nitrates; factory industries developing gradually. Portuguese descent. Indians, Negroes, 5.575 billion in mid-1993. Mulattoes and Mestizos (mixed races). Important Cities : Rio de Janeiro, Salvador, Trinidad, Buenos Aires, La Paz, Bogota.

AUSTRALIA

Australia is an island continent and is a British Dominion. The Commonwealth of Australia, including the island of Tasmania, is nearly as large as Europe but has only 17.8 million inhabitants, most of whom are of British origin, but there are about 50,000 native aborigines. Area: 7,80,682 sq. km (5.3%). Population : (1998) 18.4 million (5%). States : New South Wales (Cap. Sydney); Queensland (Cap. Brisbane); South Australia (Cap. Adelaide); Western Australia (Cap. Perth); Victoria (Cap. Melbourne); Tasmania (Cap. Hobart). All these capital cities are ports though Perth is served by the port of Fremantle. An area, largely uninhabited, is the Northern Territory. Its capital is Darwin and another famous town is Alice Springs. The Territory does not yet govern itself in the way other states do. Federal capital: Canberra. Industry : Wool, gold, iron ore, lead and zinc. One of the most important rivers is the Snowy in New South Wales and Victoria. A big new irrigation scheme is being carried out on this river and the Murray which involves taking the river waters through the mountains. The first free immigrants arrived from Britain in 1793 the east coast of Australia having been discovered by Captain Cook about twenty years earlier. These settlers came to New South Wales which is thus the oldest state in Australia. In 1910 the six states were all united in a federation called the Commonwealth of Australia.

3. National Emblems of Different Countries

Country	Emblem
Australia	Kangaroo
Bangladesh	Water Lily
Barbados	Head of a Trident
Belgium	Lion

Country	Emblem
Canada	White Lily
Chile	Candor and Huemul
Denmark	Beach
Dominica	Sisserou Parrot

Country	Emblem
France	Lily
Germany	Corn Flower
Guyana	Canje Pheasant
India	Lion Capital
Iran	Rose
Ireland	Shamrock
Israel	Candelabrum
Italy	White Lily
Ivory Coast	Elephant
Japan	Chrysanthemum
Hong Kong	Bauhinia (Orchid Tree)
Lebanon	Cedar Tree
Luxembourg	Lion with Crown
Mongolia	The Soyombo
Netherlands	Lion

Country	Emblem
New Zealand	Southern Cross, Kiwi, Fern
Norway	Lion
Pakistan	Crescent
Papua New Guinea	Bird of Paradise
Spain	Eagle
Senegal	Baobab Tree
Sierra Leone	Lion
Sri Lanka	Lion
Sudan	Secretary Bird
Syria	Eagle
Turkey	Crescent and Star
United Kingdom	Rose
U.S.A.	Golden Rod
Zimbabwe	Zimbabwe Bird

FLOWER EMBLEMS

Country	Flower Emblem
Canada	Maple
France	Lily
Germany	Cornflower
India	Lotus
Ireland	Shamrock

Country	Flower Emblem
Japan	Chrysanthemum
Scotland	Thistle
Spain	Pomegranate
United Kingdom	Rose

4. Countries and Their Parliaments

Country	Parliament
Afghanistan	Hal-o-Aqad (National Assembly)
Albania	People's Assembly
Algeria	National People's Assembly
Angola	National People's Assembly
Argentina	National Congress
Australia	Federal Parliament (House of Representatives and Senate)
Austria	National Assembly
Bahamas	General Assembly (House of Assembly and Senate)
Belize	National Assembly
Benin	National Revolutionary Assembly
Bhutan	Tshogdu (National Assembly)
Bolivia	National Congress
Botswana	National Assembly
Brazil	National Congress
Britain	Parliament (House of Commons and House of Lords)
Bulgaria	Narodno Subranie (National Assembly)
Cambodia (Kampuchea)	National Assembly
Canada	Parliament (House of Commons and Senate)
Cape Verde	People's National Assembly
China, Mainland	National People's Congress
China, National	Yuan (National Assembly)
Colombia	Congress
Cuba	National Assembly of People's Power
Denmark	Folketing
Egypt	People's Assembly

Country	Parliament
France	. . . National Assembly
Germany	. . . Bundestag (Lower House) and Bundesrat (Upper House)
Guyana	. . . National Assembly
Hungary	. . . National Assembly
Iceland	. . . Althing
India	. . . Parliament (Lok Sabha and Rajya Sabha)
Indonesia	. . . People's Consultative Assembly
Iran	. . . Majlis
Iraq	. . . National Assembly
Ireland	. . . Oireachtas or National Parliament (Dáil Éireann, House of Representatives and Seanad Éireann, Senate)
Israel	. . . Knesset
Japan	. . . Diet
Jordan	. . . National Assembly
Kenya	. . . National Assembly
Korea (North)	. . . Supreme People's Assembly
Korea (South)	. . . National Assembly
Kuwait	. . . National Assembly
Laos	. . . People's Supreme Assembly
Liberia	. . . National Assembly
Libya	. . . General People's Congress
Madagascar	. . . National People's Assembly
Malaysia	. . . Parliament (Dewan Rakyat and Dewan Negara)
Maldives	. . . Majlis
Mongolia	. . . Great People's Khural
Mozambique	. . . People's Assembly
Myanmar (Burma)	. . . Pyithu Hluttaw (People's Assembly)
Nepal	. . . National Panchayat
Netherlands	. . . Staten Generaal
New Zealand	. . . Parliament (House of Representatives)
Norway	. . . Storting
Papua New Guinea	. . . National Parliament
Poland	. . . Sejm
Romania	. . . Grand National Assembly
Russia	. . . Supreme Soviet
Senegal	. . . National Assembly
Seychelles	. . . People's Assembly
Somalia	. . . People's Assembly
South Africa	. . . House of Representatives
Spain	. . . Cortes
Sudan	. . . National Assembly
Surinam	. . . National Assembly
Sweden	. . . Riksdag
Switzerland	. . . Federal Assembly
Syria	. . . National Assembly
Tunisia	. . . Assembly of Representatives
Turkey	. . . Grand National Assembly
U.S.A.	. . . Congress
Vanuatu	. . . Parliament
Venezuela	. . . National Assembly
Vietnam	. . . National Assembly
Zaire (Democratic Republic of the Congo)	. . . National Assembly
Zambia	. . . National Assembly

WORLD TIME

Hours fast (+) or slow (-) on Greenwich Mean Time (clock time); where summer time (which is normally +1 on the hour shown) is observed the hour is marked with (*)

Afghanistan	+ 4½
Albania	+ 1*
Algeria	GMT
Andorra	+ 1
Angola	+ 1
Antigua	+ 4
Argentina	- 3
Australia	
New South Wales	
Tasmania, Victoria	+ 10*
Queensland	+ 10
South Australia	+ 9½*
Northern Territory	+ 9½
Western Australia	+ 8
Austria	+ 1
Bahamas	- 5*
Bahrain	+ 3
Bangladesh	+ 6
Barbados	- 7
Belgium	+ 1*
Belize	- 6
Benin	+ 1
Bermuda	- 4*
Bhutan	+ 5½
Bolivia	- 4
Bosnia-Herzegovina	+ 1
Botswana	+ 2
Brazil	
East	- 3
West	- 4
Acre	- 5
Brunei	+ 8
Bulgaria	+ 2
Burkina Faso (Upper Volta)	GMT
Burundi	+ 2
Cambodia	+ 7
Cameroon	+ 1
Canada	
Newfoundland	- 5½
Atlantic	- 4*
Eastern	- 5*
Central	- 6*
Mountain	- 7*
Pacific	- 8*
Yukon-Whitehorse and	
Watson Lake	- 6
Ottawa City	- 5

Cape Verde	1
Cayman Islands	5
Central African Republic	+ 1
Chad	+ 1
Chile	- 4*
China : Beijing	+ 8
Colombia	5
Commonwealth of Independent States (former U.S.S.R.)	
Moscow	+ 3
Omsk	+ 6
Vladivostok	+ 10
Anadyr	+ 13
Congo	+ 1
Costa Rica	6
Croatia	+ 1
Cuba	5*
Cyprus	
North	+ 2*
South	+ 2*
Czech Republic	+ 1
Denmark	+ 1
Djibouti	+ 3
Dominica	4
Dominican Republic	4
Ecuador	5
Egypt	+ 2*
El Salvador	6
Equatorial Guinea	+ 1
Ethiopia	+ 3
Fiji	+ 12
Finland	+ 2
France	+ 1*
Gabon	+ 1
Gambia	+ 1
Germany	+ 1
Ghana	+ 1
Gibraltar	+ 1
Greece	+ 2*
Greenland	+ 2*
Guinea-Bissau	+ 1
Guyana	3
Haiti	5
Honduras	5
Hong Kong	+ 8
Hungary	+ 1
Iceland	+ 0
India	+ 5½
Indonesia	+ 7½
Iran	+ 3½
Ireland	+ 0

Israel	+ 2°	Romania	+ 2
Italy	+ 1°	Rwanda	+ 2
Jamaica	- 5°	St. Christopher-Nevis	- 4
Japan	+ 9	St. Helena	GMT
Jordan	+ 2°	St. Lucia	- 4
Kenya	+ 3	St. Vincent and the Grenadines	- 4
Korea (North)	+ 9	San Marino	+ 1
Korea (South)	+ 9	Sao Tome and Principe	GMT
Kuwait	+ 3	Saudi Arabia	+ 2
Laos	+ 7	Sierra Leone	GMT
Lebanon	+ 2°	Singapore	+ 7½
Lesotho	+ 2	Slovakia	+ 1
Liberia	GMT	Slovenia	+ 1
Libya	+ 2	Solomon Island	+ 11
Liechtenstein	+ 1	Somalia	+ 3
Luxembourg	+ 1°	South Africa	+ 2
Macao	+ 8	South-West Africa (Namibia)	+ 2
Macedonia	+ 1	Spain	+ 1°
Madagascar	+ 3	Sri Lanka	+ 5½
Malagasy Republic	+ 3	Sudan	+ 2
Malawi	+ 2	Suriname	- 3½
Malaysia :		Swaziland	+ 2
West	+ 7½	Sweden	+ 1
Sabah, Sarawak	+ 8	Switzerland	+ 1
Maldives	+ 5	Syria	+ 2°
Mali	GMT	Tanzania	+ 3
Malta	+ 1°	Thailand	+ 7
Mauntania	GMT	Togo	GMT
Mauntius	+ 4	Tonga	+ 13
Mexico . Mexico City	- 6	Trinidad and Tobago	- 4
Monaco	+ 1°	Tunisia	+ 1
Mongolia	+ 8	Turkey	+ 2°
Montserrat	- 4	Tuvalu	+ 2
Mozambique	GMT	Uganda	+ 3
Myanmar (Burma)	+ 2	United Arab Emirates	+ 4
	+ 6½	United Kingdom	GMT
	- 11½	United States of America:	
	+ 5½	Eastern	- 5°
	+ 1	Central	- 6°
	+ 12°	Mountain	- 7°
	- 6	Pacific	- 8°
	- 1	Alaska—East	- 8°
	+ 1	—West	- 11°
	+ 1	Hawaii	- 10
	+ 5	Uruguay	- 3
	+ 5	Vanuatu	+ 11°
	- 5	Vatican	+ 1°
	+ 10	Venezuela	- 4
	- 4°	Vietnam	+ 7
	- 5	Yemen	+ 3
	+ 8	Zaire :	
	+ 1	Kinshasa	+ 1
	+ 1	Katanga	+ 2
	- 4	Zambia	+ 2
	+ 3	Zimbabwe	+ 2

WORLDWIDE WEATHER EXTREMES

TEMPERATURE EXTREMES

Temperature extremes for any place on earth are determined by a number of factors, including altitude, latitude and physical characteristics.

For an extreme to be recorded, an observation must be made at the precise time and place of occurrence; consequently, more extreme temperatures undoubtedly have occurred

THE HOTTEST

Area	Maximum (°F)	Place	Elevation (metres)	Date
Africa	136	Al' Aziziyah, Libya	116	Sept. 13, 1922
North America	134	Death Valley, California	- 54	July 10, 1913
Asia	129	Tirat Tsvi, Israel	- 220	June 21, 1942
Australia	128	Cloncurry, Queensland	193	Jan 16, 1899
Europe	122	Seville, Spain	8	Aug 4, 1891
South America	120	Rivadavia, Argentina	206	Dec 11, 1905
Oceania	108	Tuguegarao, Philippines	22	Apr 29, 1912
Antarctica	58	Esperanza, Palmer Peninsula	8	Oct 20, 1956

THE COLDEST

Antarctica	- 127	Vostok Station	3,420	Aug 24, 1960
Asia	- 90	Oymyakon, former U.S.S.R.	800	Feb. 6, 1933
Greenland	- 87	Northice Station	2,344	Jan 9, 1954
North America	- 81	Snag, Yukon, Canada	597	Feb. 3, 1947
Europe	- 67	Ust'-Schugor, former U.S.S.R.	85	Date not known
South America	- 27	Sarmiento, Argentina	286	June 1, 1907
Africa	- 11	Ifrane, Morocco	1,635	Feb 11, 1935
Australia	- 8	Charlotte Pass, New South Wales	NA	July 22, 1947

RAINFALL EXTREMES

The total annual precipitation recorded at a place may vary from year to year. The rainiest places show the greatest variations from year to year in actual amounts. The drier places show the greatest variations taken as a percentage of the mean value. At Cherrapunji (India) for example, the great amount of precipitation in a calendar year was 2,298.95 cm. The least was 717.60 cm,

a difference of 1,581.15 cm. At Arica (Chile), half of the total rainfall recorded from 1931 through 1960 fell in the single year 1949. No rain at all fell in 19 of the 30 years. Because of such fluctuations, the average rain precipitation may be greatly influenced by the available years of record; the longer the record, the more reliable is the average.

THE WETTEST

Area	Average Annual Rainfall (cm)	Place	Elevation (metres)	Years of Record
Oceania	1,169.4	Mt. Waialeale, Hawaii	1,547	33
Asia	1,143.0	Cherrapunji, India	1,313	75
Africa	1,027.7	Debundscha, Cameroon	9	33
South America	899.2	Quibdo, Colombia	73	11-17

Area	Average Annual Rainfall (cm)	Place	Elevation (metres)	Years of Record
North America	665.7	Henderson Lake, Br. Col.	4	15
Europe	464.3	Crkvice, Yugoslavia	1,017	23
Australia	454.7	Tully, Queensland	67	32

THE DRIEST

Area	Average Annual Rainfall (cm)	Place	Elevation (metres)	Years of Record
South America	0.8	Arica, Chile	29	60
Africa	0.3	Wadi Halfa, Sudan	125	40
Antarctica	2.0	South Pole Station	2,800	11
North America	3.0	Bataques, Mexico	5	15
Asia	4.6	Aden, P.D.R. Yemen	7	51
Australia	10.3	Mulka, South Australia	NA	35
Europe	16.3	Astrakhan, former U.S.S.R.	14	26
Oceania	22.7	Puako, Hawaii	2	14

7. Seven Wonders of the World

The Seven Wonders of the World were first designated by Antipater of Sidon in the second century AD. Not all classical writers list the same seven as the Seven Wonders but most of them agree on the following.

1. **The Pyramids of Egypt**: From Gizeh (near Cairo) to a southern limit 96 km distant. The oldest is that of Zoser, at Saggara, built about 2,700 BC. The Great Pyramid of Cheops covers more than 12 acres and was originally 146.61 metres (481 ft) in height and 230.43 x 230.43 metres (756 x 756 ft) at the base. Of all the Seven Wonders, the Pyramids alone survive.

2. **The Hanging Gardens of Babylon**: Adjoining Nebuchadnezzar's palace, 96 km south of Baghdad. Terraced gardens, ranging from 23 to 91 metres (75 to 300 ft) above ground level, watered from storage tank on the highest terrace.

3. **The Tomb of Mausolus**: At Halicarnassus, in Asia Minor. Built by the widowed Queen Artemisia about 350 BC. The memorial originated the term mausoleum.

4. **The Temple of Diana at Ephesus**: Ionic temple erected about 350 BC in honour of a non-Helleonic goddess who later became identified with the Greek goddess of the same name. The temple with Ionic columns 18 metres high, was destroyed by invading Goths in 262 AD.

5. **The Colossus of Rhodes**: A bronze statue of Apollo, set up about 280 BC. According to legend it stood at the harbour entrance of seaport of Rhodes. It was destroyed during an earthquake in 224 BC.

6. **The Statue of Jupiter Olympus**: At Olympia in the plain of Elis constructed of marble inlaid with ivory and gold by the sculptor Phidias, about 430 BC. All trace of it is lost, except for reproduction of coins.

7. **The Pharos of Alexandria**: A marble watch tower and lighthouse on the island of Pharos in the harbour of Alexandria, built by Sostratus of Cnidus during the 3rd century BC. It was destroyed by an earthquake in the 13th century.

8. Major World Religions

BUDDHISM

Founded : About 525 BC.

Founder : Gautam Siddhartha (563-483 BC); also known as Buddha or "Enlightened One". Son of a king, he was born in Lumbini, near the Himalayas in southern Nepal.

Location : Throughout Asia, from Sri Lanka to Japan. Zen and Soka Gakkai have several thousand adherents in the U.S.

Beliefs : Life is misery and decay, and there is no ultimate reality in it or behind it. The cycle of endless birth and rebirth continues because of desire and attachment to the unreal "self". Right meditation and deeds will end the cycle and achieve Nirvana, the Void, nothingness.

Sacred Texts : The *Tripitaka*, a collection of the Buddha's teachings, rules of monastic life and philosophical commentaries on the teachings; also a vast body of Buddhist teachings and commentaries, many of which are called *sutras*.

Summary : Buddhism is the way of life based on the teachings of Gautam Siddhartha, an Indian prince who came to be known as the Buddha ("Enlightened One"). Dissatisfied with the formalism of the Hinduism of his day and vowing to find an explanation for evil and human suffering, the prince left his family and wandered as a hermit for six years in search of truth that would liberate mankind. He found it under a bodhi (pipal or sacred fig) tree (the tree of enlightenment) and began preaching and sending missionaries forth to spread his discovery.

The Buddha taught that the path beyond sorrow and suffering was the "middle way" between austerity and sensuality. He spoke of "four noble truths": existence involves suffering, suffering results from craving, craving can be destroyed, and such destruction of desire is obtainable by following the "noble eightfold path". The steps of this path are right views, right desires, right speech, right conduct, right livelihood, right endeavour, right mindfulness and right meditation.

The Buddha did not speak of God and his teachings constitute, in the ordinary Western sense, more of a philosophy and system of ethics than a religion. Buddhism affirms the law of *Karma*, by which a person's actions in life determine his status in future incarnations. The object of the

Buddhist life is to achieve *Nirvana*, a condition of enlightenment and detachment from the world by which the cycle of successive rebirths comes to an end. *Nirvana* is the goal of all existence, the state of complete redemption, into which the redeemed enters. Buddha's insight can free every man from the law of reincarnation through complete emptying of the self.

CONFUCIANISM

Founded : About 500 BC.

Founder : Confucius (551-479 BC) born in the state of Lu (northern China). He was the foremost philosopher of China.

Location : China and Taiwan.

Beliefs : Confucianism is primarily a body of ethics and can be considered an institutional religion only in that it requires sacrifices to the gods and ancestors. However, Confucianism does not restrict itself to any formalised theology.

Sacred Texts : The *Analects*.

Summary : Confucianism is more a religious philosophy or ethical system than a religion in the strict sense. It is known to the Chinese as *Ju Chiao* (teaching of the scholars) and was the dominant force in Chinese thought, education and government for 2,000 years. Confucians generally conduct their lives according to five cardinal virtues: kindness, righteousness, decorous behaviour, wisdom and uprightness. Confucius taught that the chief ethic was benevolence and one of his prime precepts was "Treat inferiors with propriety".

The central concept of Confucian ethics is *jen*, which originally signified benevolence on the part of the rulers but was broadened to encompass the supreme virtue of love and goodness; "that by which a man is a man". Confucianism teaches that man is good and possesses free will and that virtue is its own reward.

The basis of Confucianism derives from the *Analects* of Confucius and the writings of Mencius, a sage of the 4th century BC. There are no churches, clergy or creeds in Confucianism, and its founder was far more interested in making the world more humane than in contemplating the supernatural. With the overthrow of Chinese monarchy in 1911-12, Confucianism faded. In the 1970s the communist government of China launched a campaign to wipe out Confucianism.

CHRISTIANITY

Founded : The time of Jesus Christ (about 2000 years ago).

Founder : Jesus of Nazareth, who lived from about 4 BC to 29 AD, who was the long awaited Hebrew Messiah. The foundation of Christianity is the New Testament, which recounts the life and teachings of Jesus Christ, and the works of his early followers, notably St. Paul.

Location : Spread all over the world.

Beliefs : The essence of traditional Christian theology is that Jesus was son of God who came to save the world, was crucified, resurrected and will come again to judge mankind. The core of the Christian ethic is the commandment: "Thou shalt love thy Lord thy God with all thy heart and thy neighbour as thyself."

Sacred Texts : The Bible (the Old Testament and the New Testament).

Summary : The person of Jesus is fundamental to the Christian faith since it is believed that in his life, death and resurrection, God's revelation became historically tangible. He is seen as the turning point in history and man's relationship to God as determined by his attitude to Jesus. Historically, Christianity thus arose out of Judaism, claiming fulfilment of the promises of the Old Testament in Jesus. The early Church designated itself as "the true Israel", which expected the speedy return of Jesus. The mother church was at Jerusalem, but churches were soon founded in many other places. The apostle Paul was instrumental in founding and extending a gentile Christianity that was free from Jewish legalism. The new religion spread rapidly throughout the eastern and western parts of the Roman Empire.

In coming to terms with other religious movements within the Empire, Christianity began to take definite shape as an organisation in its doctrine. In the 4th century, the Catholic Church had taken root in countries stretching from Spain in the West to Persia and India in the East. Christians had been repeatedly subject to persecution by the Roman state, but finally gained tolerance under Constantine the Great (313 AD). Since that time, the Church became favoured under his successors and in 380 AD Emperor Theodosius proclaimed Christianity the State religion. It was in these years also that the Church was able to achieve a certain unity of doctrine.

Due to difference of interpretation of basic doctrines concerning Christ, which threatened to

divide the Catholic Church, a standard Christian Creed was formulated by bishops in successive years. The chief doctrines formulated concerned the doctrine of the Trinity, i.e., that there is one god in three persons : Father, Son and Holy Spirit (Constantinople—381 AD); and the nature of Christ as both divine and human (Chalcedon—541 AD). Through differences and rivalry between East and West, the unity of the Church was broken by Schism in 1054. In 1517 a separation occurred in the Western Church with the Reformation. From the major Protestant denominations (Lutheran, Presbyterian, Anglican) many Free Churches separated themselves in an age of individualism.

Eastern Orthodoxy comprises the faith and practice of Churches stemming from ancient Churches in the Eastern part of the Roman Empire. The term covers Orthodox churches in communion with the See of Constantinople, Uniate Churches in communion with Rome, and Nestorian and Monophysite Churches. The Eastern Orthodox Churches recognise only the canons of the seven Ecumenical Councils (325-787 AD) as binding for faith and they reject doctrines that have been added in the West. The central worship service is called the Liturgy which is understood as representation of God's acts of salvation. Its centre is the celebration of the Eucharist, or Lord's Supper. In their worship icons (sacred pictures) are used that have a sacramental meaning as representation. The Mother of Christ, angels and saints are highly venerated. The number of sacraments in the Orthodox Church is the same as in the Western Catholic Church.

Roman Catholicism comprises the belief and practice of the Roman Catholic Church. The Church stands under the authority of the Bishop of Rome, the Pope and is ruled by him and bishops who are held to be, through ordination, successors of Peter and the Apostles, respectively. Fundamental to the structure of the Church is the juridical aspect : doctrine and sacraments are bound to the power of jurisdiction and consecration of the hierarchy. The Pope, as the head of the hierarchy of archbishops, bishops, priests and deacons, has full ecclesiastical power, granted to him by Christ, through Peter. As successor to Peter, he is the Vicar of Christ. The powers that others in the hierarchy possess are delegated.

Roman Catholics believe their Church to be the one, holy, catholic and apostolic Church,

possessing all the properties of the one, true Church of Christ. The faith of the Church is understood to be identical with that taught by Christ and his Apostles and contained in Bible and Tradition, i.e., the original deposit of faith, to which nothing new may be added.

The centre of Roman Catholic worship is the celebration of the Mass, the Eucharist, which is the commemoration of Christ's sacrificial death and of his resurrection. Other sacraments are Baptism, Confirmation, Confession, Matrimony, Ordination and Extreme Unction, seven in all. The Virgin Mary and saints, and their relics, are highly venerated and prayers are made to them to intercede with God, in whose presence they are believed to dwell. The Roman Catholic Church is the largest Christian organisation in the world, found in most countries.

Protestantism comprises the Christian churches that separated from Rome during the Reformation in the 16th century, initiated by an Augustinian monk, Martin Luther. "Protestant" was originally applied to followers of Luther, who protested at the Diet of Spire (1529 AD) against the decree which prohibited all further ecclesiastical reforms. Subsequently, Protestantism came to mean rejection of attempts to the God's revelation to earthly institutions and a return to the Gospel and the Word of God as sole authority in matters of faith and practice. Central in the biblical message is the justification of the sinner by faith alone. The Church is understood as a fellowship and the priesthood of all believers stressed.

Protestant missionary activity, particularly strong in the last century, resulted in the founding of many younger churches in Asia and Africa. The Ecumenical Movement, which originated with Protestant missions, aims at unity among Christians and churches.

HINDUISM

Founded : About 1500 BC.

Founder : Aryan Invaders of India where their Vedic religion intermixed with the practices and beliefs of the natives.

Location : Confined to India and Nepal.

Beliefs : There is only one divine principal; the many gods are only aspects of that unity. Life in all its forms is an aspect of the divine, but it appears as a separation from the divine, a meaningless cycle of birth and rebirth (*samsara*) determined by the purity or impurity of past deeds (*karma*). To improve one's *karma* or escape

samsara by pure acts, thought, and/or devotion is the aim of every Hindu.

Sacred Texts : The *Veda*, including the *Upanishads*, a collection of rituals and mythological and philosophical commentaries; a vast number of epic stories about gods, heroes and saints, including the *Bhagavad Gita*, the *Mahabharata* and the *Ramayana*, and a great variety of other literature.

Summary : The religion of the majority of people of India, Hinduism holds that divinity, or *atman*, is contained in all beings. Hinduism has no ecclesiastical organisation and there are no beliefs or practices universal to all Hindus. Hinduism represents God as embodying many different personalities, representing all aspects of reality. Among the most important of these deities are: *Shiva*, the god both of creation and destruction, usually represented as a dancing figure with an extra pair of arms, *Brahma*, the creator; *Vishnu*, the sleeping figure who dreams of the universe, thereby keeping it in existence; *Kali*, goddess of death, sickness and chaos; and *Krishna*, god of life.

Hindus emphasise the divinity of the soul and the harmony of all religions. Life is seen as a series of lives in which a man's position is determined by his *karma*, or deeds, in previous lives. The social "caste" into which he is born is thus an indication of his spiritual status. The ultimate goal is to be released from the cycle of rebirths in various human and animal forms through absorption by the absolute. Asceticism and the discipline of Yoga are practised to help achieve this release.

The practice of Hinduism consists of rites and ceremonies, performed within the framework of the caste system and centering on the main socio-religious occasions of birth, marriage and death. There are many Hindu temples which are dwelling places of the deities and to which people bring offerings. There are also places of pilgrimages.

ISLAM

Founded : 622 AD.

Founder : Prophet Mohammed (570-632 AD)

Location : From the west coast of Africa to the Philippines across a broad band that includes Tanzania, southern part of former U.S.S.R. and western China, India, Pakistan, Bangladesh, Malaysia and Indonesia. Islam has perhaps over two million adherents in North America.

Beliefs : Strictly monotheistic. God is creator of the universe, omnipotent, just and merciful. Man is God's highest creation but limited and sinful. He is misled by Satan, an evil spirit. God gave the *Koran* to Mohammed to guide men to the truth. Those who repent and sincerely submit to God return to a state of sinlessness. In the end, the sinless go to Paradise, a place of physical and spiritual pleasure, and the wicked burn in Hell.

Sacred Texts : *Koran*, the words of God, delivered to Mohammed by the angel Gabriel; *Hadis*, collection of the sayings of the Prophet.

Summary : Islam, an Arabic word meaning "submission to Allah (God)", is based on the revelations of Allah to Mohammed, who was born in Mecca (now in Saudi Arabia) and who lived from about 570 to 632 AD. Among Muslims, Mohammed is believed to have been a descendant of Abraham, the founder of Judaism. Mohammed received the revelation of Allah, compiled in the *Koran* (*Quran* in Arabic) and provided explanations of Koranic teachings in the *Sunna*, a collection of Traditions (moral sayings and anecdotes). Both are reinforced by the principle of *Ijma*, which states the belief that a majority of Muslims (followers of Islam) cannot agree in error. The *Koran*, the *Sunna* and the *Ijma* are the three foundations of Islam.

Islam is radically theistic and the essence of its creed is simply stated "There is no God but Allah, the Mohammed is the messenger of Allah". There is no professional priesthood in Islam and followers are expected to refrain from drinking wine. Islam means surrender to the will of Allah. He is the all powerful, whose will is supreme and determines men's fate. Good deed will be rewarded at the Last Judgment in paradise and evil deeds will be punished in hell. The Five Pillars, primary duties, of Islam are: witness, confessing the oneness of God and of Mohammed, his prophet; prayer, to be performed five times a day, alms-giving to the poor and the mosque (house of worship); fasting during daylight hours in the month of Ramzan; and pilgrimage to Mecca at least once in a Muslim's life time.

Muslims pray five times a day—at dawn, noon, mid-afternoon, dusk and at night. The prayers, which consist primarily of thanksgiving and praise of Allah, are performed facing Mecca and involve traditional physical postures. The principal public service takes place at mid-day on Friday, usually in a mosque.

Early disputes over the "caliph" or successor of Mohammed led to sectarian divisions within

Islam. The most important were the Sunnis, the Shiites and Khawarij, who differed over matters of ceremony and law. Other modern movements have included the Bahais and the Wahabis.

JUDAISM

Founded : About 1300 BC.

Founder : Moses. The great lawgiver of Jewish monotheism was born probably in Egypt to slave parents, Amram and Jochebed, of the tribe of Levi. The Egyptian law required newborn male Hebrew children to be killed. His mother is said to have hid him in a basket among the reeds of the Nile River. Found by one of the Pharaoh's daughters, he was raised by her with Jochebed as his nurse.

Location : Almost worldwide, with concentrations in Israel and the U.S.

Beliefs : Strictly monotheistic. God is the creator and absolute ruler of the universe. Men are free to choose to rebel against God's rule. God established a particular relationship with the Hebrew people: by obeying the divine law God gave them they would be a special witness to God's mercy and justice. The emphasis in Judaism is one ethical behaviour (and, among the conservative, careful ritual obedience) as the true worship of God.

Sacred Texts : Torah, or divine teaching, found particularly in the five books of the Bible; Talmud and Midrash, commentaries on Torah.

Summary : The religion of the Jewish people is the world's oldest great monotheism and the parent religion of both Christianity and Islam. The name derives from the Latin *Judaeus* and the Hebrew *Yahudi*, meaning descendant of Judah, who was the fourth son of Jacob. Judaism recognises one God, sometimes called *Elohim* or *Jehovah*. The basic prayer of Judaism, called the Shema, begins: "Hear, O Israel, the Lord our God, the Lord is one." The basis of Judaism is belief in the living God who is transcendent, omnipotent and just, and who reveals himself to mankind.

For Jews the oneness of God implies that brotherhood of men and religious knowledge is considered inseparable from the ethical injunction "to do justly and love mercy, and to walk humbly with thy God." Judaism's elaborate system of laws and rituals, such as dietary regulations, is designed to give meaning to every aspect of daily life. Jews have an ordained clergy and observe the Sabbath, which runs from sunset Friday to

sunset Saturday and is observed with services of prayer in local synagogues.

SHINTOISM

Founded : Antiquity, originated with the beginning of the Japanese culture.

Founder : Developed out of primitive nature and ancestor worship.

Location: Japan

Beliefs: Shinto, the Chinese term for the Japanese *Kami no Michi*, i.e., the Way of the Gods, comprises the religious idea and cult indigenous to Japan. *Kami*, or gods, considered divine forces of nature that are worshipped, may reside in river, trees, rocks, mountains, certain animals, or, particularly, in the sun and moon. The worship of ancestors, heroes and deceased emperors was incorporated later

Sacred Texts : None.

Summary : Shinto is a set of rituals and customs involving pilgrimages, festivals and worship of a great host of gods. It is a folk religion, limited strictly to the Japanese people and thus without any universal prophetic message. The highest deity is the sun goddess, known as the Ruler of Heaven. Gods are worshipped through the sacrifice of rice and rice wine.

Shinto did not evolve an ethical system of its own but gradually borrowed ethical principles from Buddhism and Confucianism. It is essentially a set of customs and rituals rather than an ethical or moral system. Great emphasis is placed on ceremonial purity and bodily cleanliness. The centres of worship are the shrines and temples in which the deities are believed to dwell and believers approach them through *torii* (gateways). Most important among the shrines is the imperial shrine of the Sun goddess at Ise, where state ceremonies were once held in June and December. The Yasukuni shrine of the war dead in Tokyo is also well known.

Acts of worship consist of prayers, clapping of hands, acts of purification and offerings. On feast days processions and performances of music and dancing take place and priests read prayers before the gods in the shrines, asking for good harvest, the well-being of people and emperor, etc. In Japanese homes there is a god-shelf, a small wooden shrine that contains the tablets bearing the names of ancestors. Offerings are made and candles lit before it.

SIKHISM

Founded : About 1500 AD.

Founder : Guru Nanak (1469-1539).

Location : India.

Beliefs : The founder of Sikhism taught that there was a single God, rejecting the many deities of Hinduism and the worship of idols. He attempted to eliminate the caste system of Hinduism, uniting his followers into one class.

Sacred Texts : Granth Sahib.

Summary : Most of the people who follow the religion of Sikhism live in the state of Punjab in northwestern India. The religion combines the beliefs of the Islam and Hinduism. Guru Nanak preached that there was only one God for Hindus and Muslims. He tried to work out a synthesis of the two religions. His mission became popular and he very soon had a large following

TAOISM

Founded : 6th century BC.

Founder : Lao Tse, a Chinese philosopher and prominent religious leader.

Location : China and Taiwan.

Beliefs : Taoism preaches goodness, simplicity, purity and gentleness in everyday life. The three jewels of Taoism are compassion, moderation and humility.

Sacred Texts : Tao Te Ching

Summary : The chief rival to Confucianism in influencing Chinese philosophy and culture, Taoism actually consists of two movements: a philosophy (Tao Chia) and a religion (Tao Chiao). Both derive from the philosopher Lao Tse who, according to tradition, lived in the sixth century BC. The term *Tao* has been translated as way, road, and even being. The book *Tao Te Ching*, attributed to Lao Tse, states that "the eternal Tao cannot be put into words, nor can the unchanging name be given a definition."

Philosophical Taoism espoused a radical naturalism that urged the acceptance of "all things in their natural state" and deplored passion, unnecessary invention, artificial ceremonies and government activities such as war and taxation. Virtue was cast in passive and feminine terms. "There is nothing softer and weaker than water and yet there is nothing better for attacking hard and strong things," was one of its precepts.

Taoism developed beliefs concerning an after-life, which included a heaven and hell, as well as a cosmology that divided all reality into male and female principles, or yang and yin. In its latter development, Taoism became concerned with magic and also provided the basis for many secret societies.

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Beliefs : Taoism preaches goodness, simplicity, purity and gentleness in everyday life. The three jewels of Taoism are compassion, moderation and humility.

Sacred Texts : Tao Te Ching

Summary : The chief rival to Confucianism in influencing Chinese philosophy and culture, Taoism actually consists of two movements: a philosophy (Tao Chia) and a religion (Tao Chiao). Both derive from the philosopher Lao Tse who, according to tradition, lived in the sixth century BC. The term *Tao* has been translated as way, road, and even being. The book *Tao Te Ching*, attributed to Lao Tse, states that "the eternal Tao cannot be put into words, nor can the unchanging name be given a definition".

Philosophical Taoism espoused a radical naturalism that urged the acceptance of "all things in their natural state" and deplored passion, unnecessary invention, artificial ceremonies and government activities such as war and taxation. Virtue was cast in passive and feminine terms. "There is nothing softer and weaker than water and yet there is nothing better for attacking hard and strong things" was one of its precepts.

Taoism developed beliefs concerning an after-life, which included a heaven and hell, as well as a cosmology that divided all reality into male and female principles, or *yang* and *yin*. In its latter development, Taoism became concerned with magic and also provided the basis for many secret societies.

RELIGION-WISE POPULATION OF THE WORLD (Mid-1996)

	Population	%	No. of countries		Population	%	No. of countries
Christian (Total)	1,955,229,000	33.7	(260)	Shintoist	2,897,500		
Roman Catholic	981,485,000			Sikh	19,508,000	0.3	(21)
Protestant	404,020,000			Spiritists	10,232,500		
Orthodox	218,350,000			Baha'i	6,404,000	0.1	(210)
Anglican	69,136,000			Jain	4,920,000		
Other Christians	282,258,000			Confucian	5,086,000		
Jewish	13,866,000	0.2	(134)	Buddhist	325,275,000	5.6	(92)
Muslim	1,126,325,000	19.4	(184)	Hindu	793,075,000	13.7	(94)
Non-religious	886,928,500	15.3	(226)	Other religionists	1,952,000		
Atheists	222,195,000	3.8	(139)				
Chinese folk religionists	220,971,000	3.8	(60)	World Population	5,804,120,000		
New religionists	106,015,000			<i>Source : Encyclopedia Britannica Book of the Year, 1997.</i>			
Ethnic religionists	102,945,000						

9. Principal Languages of the World

Total number of speakers of languages spoken by at least ten million persons (mid-year 1995).

Language	Millions	Language	Millions
Afrikaans (South Africa)	10	Malay (Indonesian)	159
Amharic (Ethiopia)	20	Malayalam (India)	35
Arabic	225	Mandarin (China)	975
Assamese (India, Bangladesh)	22	Marathi (India)	70
Azeri (Azerbaijan)	15	Min (China; Taiwan; Malaysia)	50
Bengali (Bangladesh; India)	200	Nepali (Nepal; India; Bhutan)	16
Burmese (Myanmar)	31	Oriya (India)	32
Byelorussian (Belarus)	10	Oromo (W. Ethiopia, N. Kenya)	10
Cantonese (China, Hong Kong)	66	Persian (Iran, Afghanistan)	35
Cebuano (Bohol Sea, Philippines)	13	Polish (Poland)	44
Czech (Czech Republic)	12	Portuguese	189
Dutch-Flemish (Netherlands; Belgium)	21	Punjabi (India; Pakistan)	95
English	478	Pushtu (mainly Afghanistan; also Pakistan, Iran)	21
French	125	Romanian (Romania, Moldova)	26
Fula (Cameroon, Nigeria)	13	Russian	284
German	123	Serbo-Croatian (north-west Balkan area)	20
Greek (Greece)	12	Sindhi (India; Pakistan)	18
Gujarati (India)	41	Sinhalese (Sri Lanka)	13
Hakka (or Kejia) (China)	34	Spanish	392
Hausa (Nigeria; Niger; Cameroon)	38	Sundanese (Indonesia)	26
Hindi	437	Swahili (Kenya; Tanzania; Zaire; Uganda)	49
Hungarian (or Magyar) (Hungary)	14	Tagalog (Philippines)	54
Ibo (or Igbo) (Niger; Nigeria)	17	Tamil (India; Sri Lanka)	71
Italian (Italy)	63	Telugu (India)	74
Japanese	126	Thai (Thailand)	51
Javanese (Jawa, Indonesia)	64	Turkish (Turkey)	60
Kannada (India)	44	Ukrainian (Ukraine, Russia, Poland)	47
Korean (Korea, China, Japan)	75	Urdu (Pakistan; India)	102
Kurdish (South-West of Caspian Sea)	11	Uzbek (Uzbekistan)	14
Madurese (Madura, Indonesia)	10	Vietnamese (Vietnam)	65
Malagasy (Madagascar)	12	Wu (China)	65
		Yoruba (Nigeria; Zou, Benin)	20
		Zhuang (South China)	15

10. Glimpses of World History

Q. What do you know of the French Revolution of 1789?

A. The French Revolution of 1789 is one of the greatest landmarks in the history of mankind. It ushered in a new era of liberty, equality and fraternity. The revolution was caused by chaotic economic and social conditions of 18th century France. The philosophers created the background and peasants took the lead to overthrow the old and outdated society. The revolution started with the fall of the Bastille and ended with the establishment of empire of Napoleon Bonaparte.

Q. What do you understand by the continental system?

A. Continental System : When Napoleon found it difficult to suppress supremacy of the English navy, he resorted to the continental system to humiliate the English by suppressing their foreign trade. He Issued the Berlin Decree in 1806, under which the British Isles were blockaded and all ships entering the French coast or the ports of allied nations with British cargo were liable to be seized and confiscated. The continental system was strengthened with decrees of Milan and Warsaw. In retaliation, the English Issued Orders in Council forbidding neutral vessels to trade with France and the allies.

Q. Who won the following battles:

(a) Battle of Austerlitz (b) Battle of Nations
(c) Battle of Waterloo (d) Battle of Sadowa (e) Battle of Sedan ?

A. (a) Battle of Austerlitz : Napoleon defeated the Allied Forces of Russia and Austria in the Battle of Austerlitz in December 1805. The English Prime Minister made a dismaying observation, "Roll up the map of Europe; it will not be wanted these ten years."

(b) Battle of Nations : Napoleon was disastrously defeated at the Battle of Nations in October 1814 AD by the allied forces.

(c) Battle of Waterloo : The Duke of Wellington defeated Napoleon decisively in June 1815 at the battle of Waterloo. This defeat put an end to the Napoleonic age.

(d) Battle of Sadowa : Bismarck defeated Austria at the battle of Sadowa in 1866

(e) Battle of Sedan : Napoleon III was defeated by the Prussians at the battle of Sedan in 1870 AD

Q. Write short notes on the following:

(a) The Bastille (b) The American Civil War

A. (a) The Bastille : It was an old prison in Paris and was destroyed by the French people during the revolution of 1789. In fact the fall of the Bastille heralded the revolution in France.

(b) The American Civil War : It was fought (1861-1865) between the northern and southern states of U.S.A. on the question of abolition of slavery. The southern states wanted to secede from the federation but were defeated.

Q. Write short notes on :

(a) Congress of Vienna (b) Metternich
(c) Louis Philippe (d) Cavour (e) Bismarck
(f) Treaty of Berlin.

A. (a) The Congress of Vienna was held after the abdication of Napoleon. It restored the Bourbons in France and other monarchial governments wherever they had been overthrown by Napoleon. The allied powers also distributed the spoils of the French defeat among the numerous nations.

(b) Metternich was the Austrian Chancellor from 1815 to 1848. He dominated the politics of Europe during that period. He was opposed to the forces of liberalism and revolution and kept the heterogeneous Austrian empire intact. When revolution again broke out in France in 1848 AD there were some demonstrations in Vienna and Metternich fled for safety.

(c) Louis Philippe was the emperor of France from 1830-1848 AD. He changed the traditional symbols of monarchy and came to be known as the "Citizen King". He was opposed to the weak foreign policy of his predecessors.

(d) Cavour was one of the prominent statesmen of the Italian unification. By a series of treaties to modernise the Piedmont state and to pursue foreign policy Cavour helped a great deal in the cause of unification.

(e) Bismarck was the Chancellor of Germany. As a Chancellor of Prussia he achieved the unification of Germany with the use of blood and iron. Later he dominated the foreign policy of Europe from 1871 to 1890 AD.

(f) The Treaty of Berlin was signed in 1878 AD. The European powers of Russia were frustrated by the Balkan states of Europe obtained independence. The treaty gave life to England's policy of "The Balance of Power".

Q. What do you know of the Russian Revolution?

A. Russian Revolution: In 1917 there was a Bolshevik Revolution led by Lenin. It overthrew the regime of the Czar and established a Government of the working people. Consequently, Russia achieved phenomenal progress in the domain of agriculture and industry. The old social order gave way to a new society in which all were free, equal and entitled to a fair wage.

IMPORTANT DATES IN WORLD HISTORY

BC

- 5000 : First Pharaoh rules in Egypt.
- 3000 : Building of the Great Pyramid.
- 2500 : Early Chinese civilisation.
- 2000 : The time of Abraham and Isaac.
- 1000 : Egypt ceases to be a power
- 776 : First Olympiad in Greece.
- 753 : Rome founded.
- 590 : Jews captive in Babylon
- 490 : Greeks beat Persians at Marathon
- 480 : Battle at Thermopylae, Persians defeated Greeks. Battle at Salamis, Greeks defeated Persians
- 430 : War between Athens and Sparta.
- 360 : The time of Plato and Aristotle.
- 356 : Birth of Alexander, the Great
- 332 : Alexander conquers Egypt
- 323 : Death of Alexander at Babylon (near Baghdad)
- 214 : Building of the Great Wall of China.
- 80 : Romans conquer Gaul (France)
- 63 : Romans conquer Jerusalem.
- 44 : Julius Caesar murdered.
- 4 : Birth of Christ

AD

- 29 : Crucifixion of Christ.
- 375 : Invasion of Europe by Huns.
- 570 : Birth of Mohammed at Mecca
- 612 : Mohammed proclaims the religion of Islam.
- 632 : Death of Mohammed.
- 711 : Arabs invade Spain
- 715 : Arab empire at its Zenith
- 750 : Arab empire ends
- 1453 : Capture of Constantinople by the Turks.
- 1492 : Columbus discovers the West Indies.
- 1497 : Cabot discovers Newfoundland
- 1498 : Discovery of the route to India via Cape of Good Hope by Vasco da Gama
- 1522 : First voyage round the world by Magellan of Spain.

- 1704 : Battle of Blenheim.
- 1770 : Captain Cook sails to New South Wales
- 1773 : 'Boston Tea Party'.
- 1776 : American War of Independence.
- 1789 : French Revolution begins. George Washington installed first President of America.
- 1804 : Napoleon becomes Emperor in France
- 1805 : Battle of Trafalgar and Nelson's death.
- 1807 : British Orders in Council
- 1812 : Napoleon's invasion of Russia.
- 1814 : Restoration of Bourbons in France.
- 1815 : The Vienna Settlement, Battle of Waterloo.
- 1818 : Congress of Aix-la-Chapelle.
- 1830 : July Revolution of France
- 1848 : Flight of Metternich.
- 1854 : Crimean War.
- 1861-65 : American Civil War.
- 1863 : Slavery abolished in America.
- 1864 : Establishment of Red Cross Society in Geneva.
- 1866 : Austro-Prussian War.
- 1869 : Opening of Suez Canal.
- 1870 : Defeat of France by Germany.
- 1878 : Treaty of Berlin.
- 1890 : Resignation of Bismarck.
- 1895 : Discovery of X-Ray.
- 1896 : Invention of Wireless
- 1899-1901 : Boer War.
- 1904 : Russo-Japanese War.
- 1911 : Chinese Revolution.
- 1912 : Establishment of Republic of China.
- 1914-18 : First World War.
- 1916 : Battle of Jutland.
- 1917 : Russian Revolution
- 1919 : Treaty of Versailles.
- 1920 : Foundation of League of Nations.
- 1921 : Establishment of Irish Free State.
- 1923 : Republic proclaimed in Turkey.
- 1924 : Death of Lenin.
- 1928 : Kellogg Pact.
- 1932 : Election of Roosevelt as President of America
- 1933 : Hitler became the Chancellor of Germany.
- 1935 : Italy annexes Ethiopia.
- 1936 : Edward VIII abdicates the throne of England to marry Mrs. Simpson.
- 1939-45 : Second World War.
- 1941 : Pearl Harbour bombed.
- 1945 : Foundation of UNO.
- 1946 : Civil War in China.
- 1947 : India achieves independence.
- 1949 : The Communists establish a People's Republic in China.

1950-53 : War In Korea.

1951 : Murder of Premier Liaquat Ali Khan in Pakistan.

1952 : General Eisenhower elected as American President.

1953 : Death of Stalin; Everest scaled.

1954 : Visit of Chou En-lai to India.

1955 : Bandung Conference.

1956 : Anglo-French Invasion of Egypt; President Nasser nationalises Suez Canal

1957 : First Sputnik by U.S.S.R.

1958 : Egypt and Syria united to form United Arab Republic (U.A.R.).

1959 : Chinese occupy Tibet; Dalai Lama flees to India.

1960 : John F. Kennedy elected President of U.S.A.

1961 : Major Yuri Gagarin of U.S.S.R. made first flight into space; Death of UN Secretary General, Dag Hammarskjöld in air crash.

1962 : U Thant became Secretary-General of UN; Chinese Invasion on Indian border.

1963 : Assassination of U.S. President John F. Kennedy.

1964 : China exploded her first atom bomb; Nikita Khrushchev relieved of the Prime Ministership of U.S.S.R.

1965 : Lyndon B. Johnson became President of U.S.A.; Sir Winston Churchill died; Singapore becomes sovereign independent nation; Indo-Pak conflict.

1966 : Tashkent declaration; Soft landing on moon by Luna 9; Luna 10 first lunar orbiter.

1967 : Arab-Israel war; Suez Canal closed.

1968 : American Negro leader, Martin Luther King assassinated; Senafor Robert Kennedy shot dead; Czechoslovakia invaded by Warsaw Pact powers.

1969 : Richard Nixon elected as 37th President of U.S.A.; Americans Armstrong and Aldrin first men on moon; Death of D. Eisenhower; Pompidou elected President of France; Willy Brandt elected Chancellor of West Germany.

1970 : Death of Salazar, dictator of Portugal; death of President Nasser of U.A.R. and death of Charles de Gaulle, former President of France; Edward Heath became Prime Minister of U.K.; Mrs. Srimavo Bandaranaike elected Prime Minister of Ceylon (Sri Lanka).

1971 : Short war between India and Pakistan; Bangladesh emerged as an independent state; treaty of friendship between India and U.S.S.R. signed; Nikita Khrushchev died; Z.A. Bhutto replaced Yahya Khan as President of Pakistan.

1972 : Dr. Kurt Waldheim became Secretary-General of UN; Sheikh Mujibur Rahman released from Pakistan jail and became Prime Minister of Bangladesh; King Mahendra of Nepal died, Nixon re-elected President of U.S.A.

1973 : New Constitution of Pakistan, Z.A. Bhutto elected Prime Minister of Pakistan; Dr. Henry Kissinger became U.S. Secretary of State; ceasefire in South Vietnam; outbreak of Arab-Israeli War.

1974 : Valery Giscard D'Estaing elected President of France; Coronation of Jigme Singhye Wangchuk of Bhutan; Nixon resigned, Gerald Ford became President of U.S.A.

1975 : Mrs. Junko Tabei of Japan conquers Mount Everest; Communists take over in Vietnam, Cambodia and Laos; Sheikh Mujibur Rahman, President of Bangladesh, assassinated in army coup and several top Bangladesh leaders also assassinated in jail; King Faisal of Saudi Arabia assassinated; Apollo-Soyuz link-up in space; Coronation of Birendra Bir Bikram Shah of Nepal; Suez Canal reopened.

1976 : Chou En-lai passes away; Harold Wilson resigns from Prime Ministership of U.K.; James Callaghan elected Britain's new Prime Minister, Vietnam unified (June 24); Mao Tse-tung passes away; Hua Guo-feng becomes Chairman of the Chinese Communist Party; N-test by China (October 17); Jimmy Carter elected U.S. President (November 3); Takeo Fukuda installed Japanese Prime Minister.

1977 : Jimmy Carter sworn in U.S. President; Ethiopian Head of State Tafari Banto executed; Congolese President Marien Ngouabi assassinated, General Mohammed Zia-ul-Haq takes over power in Pakistan after bloodless coup, Z.A. Bhutto taken into protective custody, Mrs. Srimavo Bandaranaike, Prime Minister of Sri Lanka, deposed; J. R. Jayewardene elected Prime Minister of Sri Lanka.

1978 : Former Prime Minister of Pakistan, Z.A. Bhutto sentenced to death by Lahore High Court; Bloody coup in Afghanistan and President Mohammed Daoud assassinated; Presidents of North Yemen and South Yemen assassinated. World's first test tube baby, Louise Joy Brown born in Oldham, England. Worst earthquake of the century in Tabas, the desert town of Iran, killing or injuring about 26,000 people. Egypt-Israel peace accord at Camp David, Maryland.

1979 : China-Vietnam war; China withdraws from Vietnam; Egypt and Israel sign peace treaty, Z.A. Bhutto hanged, Mrs. Margaret Thatcher, the Tory leader, becomes first woman Prime Minister

of Britain; Skylab crashes into Indian Ocean; Lord Mountbatten murdered; Bloodless coup in Central Africa and Emperor Bokassa overthrown; South Korean President Park Cheng Hee killed; Coup in Afghanistan, President Halizullah Amin overthrown; Ousted President of Afghanistan Amin executed.

1980 : Liberian President William Tolbert is assassinated; Africa's newest state—Zimbabwe—is born under the leadership of Robert Mugabe; Marshal Josip Broz Tito, President of Yugoslavia, is dead; China admitted to the World Bank and International Monetary Fund; Former Shah of Iran, Mohammed Reza Pahlavi, is dead; Syria and Libya proclaim merger of their countries; War between Iraq and Iran; More than 20,000 persons die in Algeria following massive earthquake; Ronald Reagan, Republican leader, wins election for American presidency; Milton Obote becomes President of Uganda for the second time.

1981 : Greece becomes the tenth member of the European Common Market; Ronald Reagan is inaugurated 40th President of the United States; Soviet Union launches manned Soyuz; U.S. launches successfully its space shuttle 'Columbia' into orbit; Ziaur Rahman of Bangladesh assassinated in Chittagong; First elected Government in Nepal under the premiership of Surya Bahadur Thapa installed; Newly elected President Mohammad Ali Rajai and newly-elected Prime Minister Hojatoleslam Mohammad Javad Bahrani of Iran killed in bomb explosion; Anwar Sadat assassinated by his soldiers and Hosni Mubarak appointed President of Egypt; Israel war hero Moshe Dayan dies; C.V. Devan Nair of Indian origin elected President of Singapore; Javier Perez De Cuellar elected fifth Secretary-General of UN.

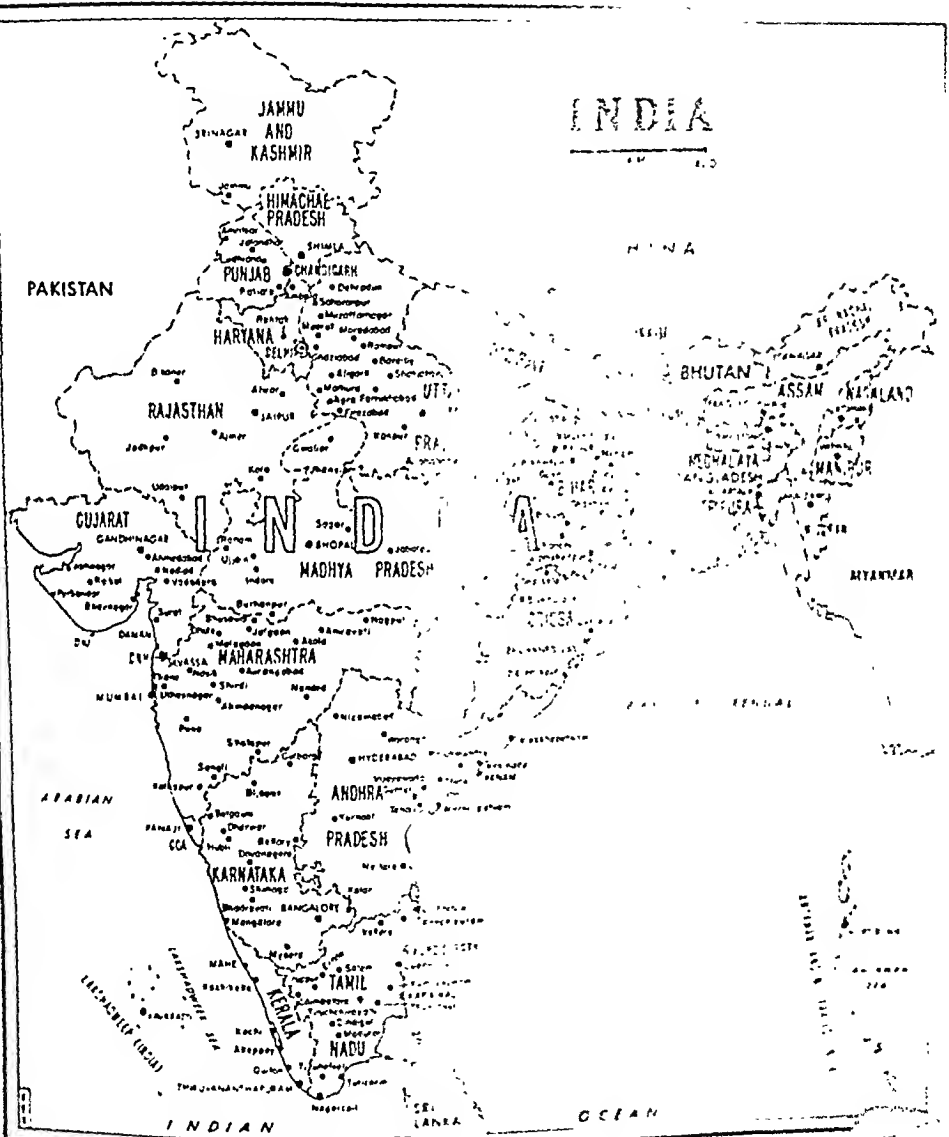
1982 : Soviet space probe satellite lands on Venus; H.M. Ershad takes over power as Chief Martial law Administrator of Bangladesh; Lebanon's President-elect Bashir Gemayel assassinated in a bomb blast; Amin Gemayel appointed Lebanon's President; Conservative opposition leader Helmut Kohl succeeds Helmut Schmidt as sixth Chancellor of West Germany; J. R. Jayewardene elected President of Sri Lanka for a second term; Soviet President Leonid Brezhnev dies after heart attack; Yuri Andropov succeeds Brezhnev as General Secretary of the Soviet Communist Party, Yasuhiro Nakasone elected new Premier of Japan; Barry Clark gets world's first artificial heart; China adopts new constitution; Japanese mountaineers Yasuo Kotto and Toshahi Kabayasi killed in the Everest region.

1983 : Seventh non-aligned summit held in New Delhi; Mrs. Indira Gandhi elected chairperson of the non-aligned movement; Sally K. Ride becomes first American woman astronaut with her flight in space shuttle 'Challenger'; Yuri Andropov elected President of U.S.S.R.; Li Xiannan elected President of China; India wins third Prudential World Cup at Lord's; U.S. space shuttle 'Challenger' takes off from Cape Kennedy with Indian satellite INSAT-1B aboard; Israeli Foreign Minister Yitzhak Shamir chosen to succeed Menachem Begin as Prime Minister of Israel; Former Japanese Prime Minister Kakuei Tanaka is found guilty of taking 500-million-yen (Rs. 2.2 crore) bribe from Lockheed Aircraft Corporation and sentenced to four years in prison and fine equivalent to the bribe; Commonwealth Heads of Government Meeting (CHOGM) held in New Delhi; H.M. Ershad proclaims himself President of Bangladesh.

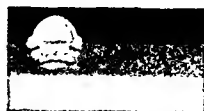
1984 : Soviet President and Soviet Communist Party chief Yuri Andropov is dead; Konstantin Chernenko becomes new Soviet Communist Party General Secretary; Konstantin Chernenko is elected President of Soviet Union; Joint Indo-Soviet space mission (April 3-11) in which Sqn. Ldr. Rakesh Sharma is launched aboard Soyuz T-11 spaceship from the Baikonour cosmodrome in Kazakhstan (U.S.S.R.) along with two Soviet cosmonauts, Flight Commander Yuri Vasilevich Malyshev and Flight Engineer Gennady Mikhailovich Strekalov; New Labour Party Government with David Lange as Prime Minister sworn in New Zealand; 23rd Olympic Games in Los Angeles; Indira Gandhi, Prime Minister of India, assassinated; Ronald Reagan re-elected as American President; U.S. and Iraq restore diplomatic relations ending 17-year break; U.S. formally withdraws from UNESCO.

1985 : Mikhail Gorbachev is elected new leader of the Soviet Communist Party; Mohammad Khan Junejo is appointed new Prime Minister of Pakistan; Soyuz spacecraft docks with orbiting Salyut-7 space station; Soviet space module lands on Venus (June 12); Andrei Gromyko elected President of the Soviet Union; Commonwealth Heads of Government Meet at Nassau (Bahamas); U.S. President Ronald Reagan and Soviet leader Mikhail Gorbachev meet in Geneva; SAARC summit begins in Dhaka; Prime Minister Rajiv Gandhi joins leaders from five nations in a global tele-conference at a UN ceremony to receive the 1985 "Beyond War" award; Martial law in Pakistan lifted; Britain quits UNESCO.

INDIA



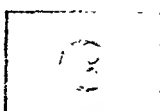
FLAGS OF NATIONS



Afghanistan



Albania



Algeria



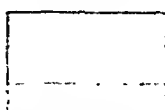
Angola



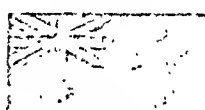
Angola



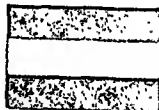
Antigua and Barbuda



Argentina



Australia



Austria



Bahrain



Bahamas



Bangladesh



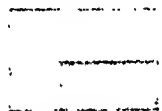
Barbados



Belgium



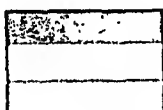
Belize



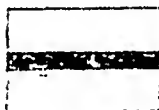
Benin (Dahomey)



Bhutan



Bolivia



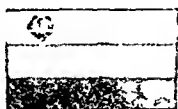
Botswana



Brazil



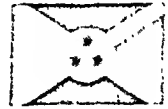
Brunei



Bulgaria



Burma (Myanmar)



Burundi



Cambodia (Kampuchea)



Cameroon



Canada



Cape Verde



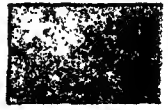
Central African Republic



Chad

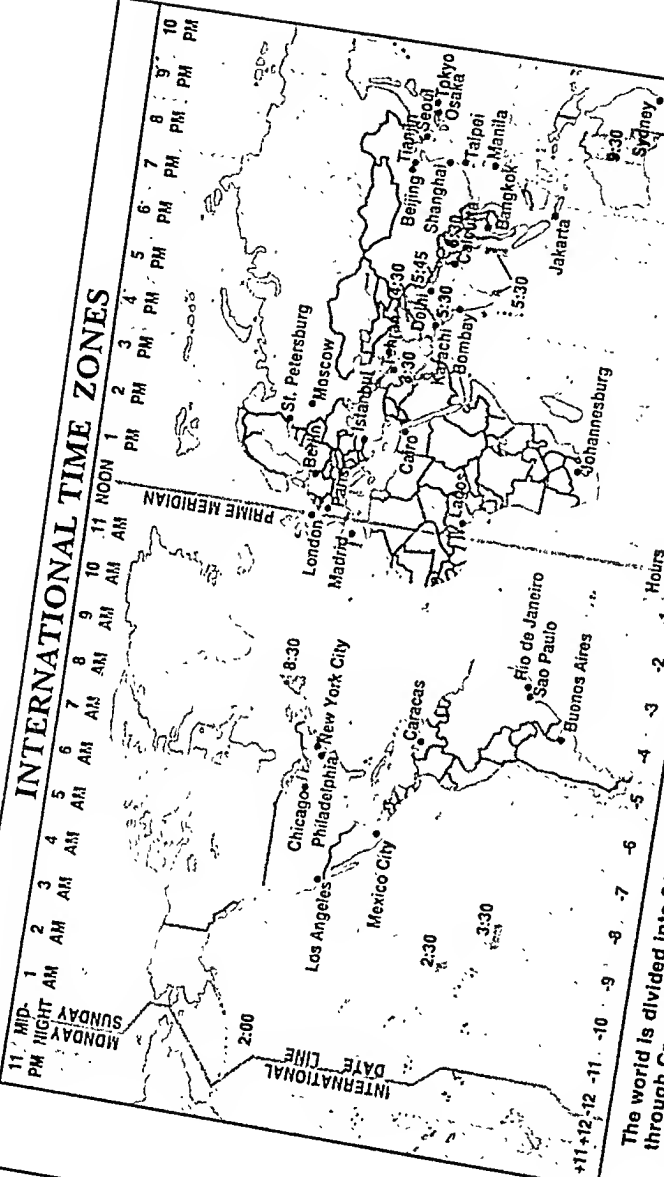


Chile



China

INTERNATIONAL TIME ZONES



The world is divided into 24 time zones, each 15° longitude wide. The longitudinal meridian passing through Greenwich, England, is the starting point, and is called the *prime meridian*. The 12th zone is advanced one day; when crossed going east, the date becomes a day earlier.

FLAGS OF NATIONS



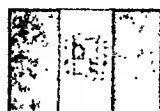
Afghanistan



Albania



Algeria



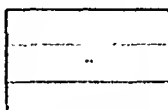
Andorra



Angola



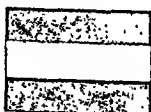
Antigua and Barbuda



Argentina



Australia



Austria



Bahrain



Bahamas



Bangladesh



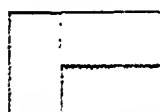
Barbados



Belgium



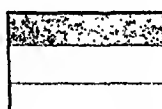
Belize



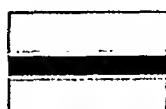
Benin (Dahomey)



Bhutan



Bolivia



Botswana



Brazil



Brunei



Bulgaria



Burma (Myanmar)



Burundi



Cambodia (Kampuchea)



Cameroon



Canada



Cape Verde



Central African Republic



Chad



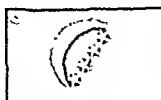
Chile



China



Colombia



Comoro Islands



Congo



Costa Rica



Cuba



Cyprus



Denmark



Djibouti



Dominica



Dominican Republic



Ecuador



Egypt



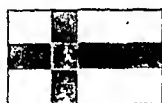
El Salvador



Ethiopia



Fiji



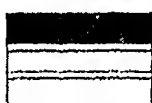
Finland



France



Gabon



Gambia



Germany, unified



Ghana



Greece



Guatemala



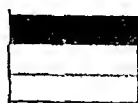
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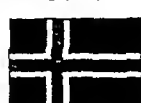
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Haiti



Hungary



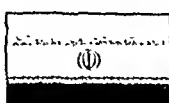
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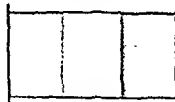
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Iran



Iraq



Ireland



Israel



Italy



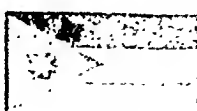
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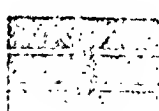
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Japan



Jordan



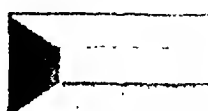
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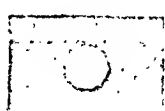
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Korea, South



Kuwait



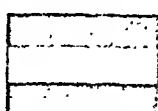
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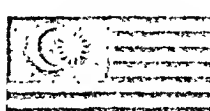
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Libya



Luxembourg



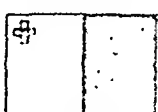
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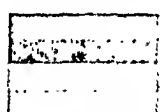
Maldives



Mali



Malta



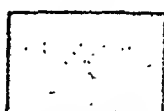
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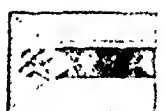
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Mongolia



Morocco



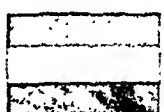
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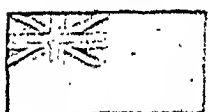
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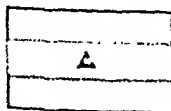
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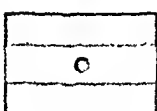
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New Zealand



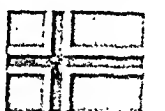
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Niger



Nigeria



Norway



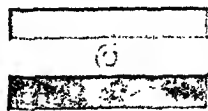
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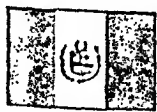
Pakistan



Papua New Guinea



Paraguay



Peru



Philippines



Poland



Portugal



Qatar



Romania



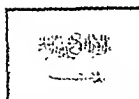
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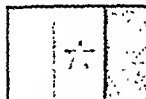
Saint Kitts & Nevis



San Marino



Saudi Arabia



Senegal



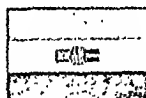
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Singapore



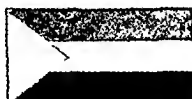
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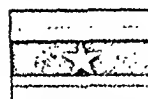
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Sri Lanka



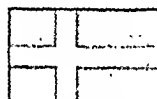
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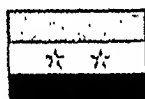
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Swaziland



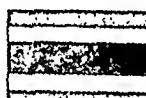
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Syria



Tanzania



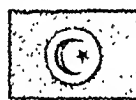
Thailand



Togo



Trinidad and Tobago



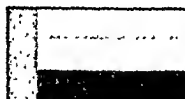
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Turkey



Uganda



United Arab Emirates



United Kingdom



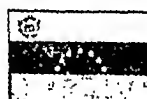
United States



Uruguay



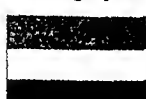
Vanuatu



Venezuela



Vietnam



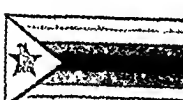
Yemen



Zaire



Zambia



Zimbabwe



United Nations

1986

U.S. space shuttle 'Challenger' bursts into flames minute and a quarter after launch at Cape Canaveral killing seven (January 27); Swedish Prime Minister Olof Palme is killed (February 28); Moscow admits of serious explosion at Chernobyl nuclear reactor in Ukraine (April 28); Zimbabwean Prime Minister Robert Mugabe takes over as chairman of NAM from Rajiv Gandhi at the NAM session in Harare (September 1); H. M. Ershad sworn in as Bangladesh's ninth President (October 18); Soviet dissident and former Nobel laureate Andrei Sakharov and his wife released from exile in Gorky (December 19).

1987

Austrian President and former U.N. Secretary-General Kurt Waldheim barred from entering the United States because of his World War II activities with the German army (April 28); Gunnar Myrdal, Nobel Prize winner in economics in 1974, passes away (May 17); Col. Rabuka revokes Constitution and becomes head of the State in Fiji, replacing Queen Elizabeth (Oct. 1); Indian Peace Keeping Force takes control over Jaffna (Oct. 25); U.S.A. and U.S.S.R. sign INF treaty in Washington (Dec. 9).

1988

Khan Abdul Ghafar Khan passes away in Peshawar (January 21); India lifts Sharjah Cup defeating New Zealand by 52 runs; Pakistan test fires missile that can reach Delhi (May 25); Zia-ul-Haq dissolves Pakistan Assembly and sacks Prime Minister Mohammed Khan Junejo (May 31); Iran announces unconditional acceptance of UN Security Council call for cease-fire in Gulf war (July 18); Truce between Iran and Iraq (August 21); XXV Olympic Games in Seoul (September 17-October 2); PLO Chairman Yasser Arafat declares a State of Independent Palestine (November 15); Yasser Arafat addresses special UN Assembly session in Geneva (Dec. 13); R. Premadasa elected President of Sri Lanka (December 20). SAARC Summit opens at Islamabad (December 29);

1989

U.S. Naval planes shoot down two Libyan fighter jets off the coast of Libya (January 4); Japan's Emperor Hirohito is dead and Crown Prince Akihito ascends throne (January 7); George Bush sworn in 41st President of U.S. (January 20); Soviets complete withdrawal from Afghanistan (February 13); PLO leader Yasser Arafat elected President of Palestine State (April 2); Chief Justice of India R.S. Pathak elected to the World Court (April 18);

Tornado sweeps through Bangladesh in which nearly 1,000 feared killed and 15,000 injured (April 27); Thousands killed in Tiananmen Square in Beijing when Chinese troops crack down on pro-democracy protesters (June 4); Iranian leader Ayatollah Khomeini dies (June 4); Zhao Ziyang sacked from China party posts (June 24); Bicentennial of French Revolution opens in Paris (July 13); Rafsanjani elected Iran's President (July 29); F. W. de Klerk sworn in South African President (August 15); Ninth NAM summit begins at Belgrade (September 4); Vietnam pull out of Cambodia (September 26); Ferdinand Marcos, former President of Philippines, dies (September 28); Dalai Lama wins 1989 Nobel Peace Prize (October 4); 27th CHOGM at Kuala Lumpur (October 22); Dismantling of Berlin Wall begins (November 11); Andrei Sakharov dies (December 15); U.S. troops invade Panama (December 20).

1990

Nelson Mandela is freed from prison after 27 years (Feb. 2); Holland lifts World Cup hockey title at Lahore (Feb. 23); Lithuania declares independence from Soviet Union (March 12); Namibia becomes a free nation (March 20); Latvia declares independence from the Soviet Union (May 4); Leander Paes wins junior Wimbledon tennis title and Edberg lifts men's title (July 8); Soviet Byelorussia declares sovereignty (July 7); Pakistan Premier Benazir Bhutto is sacked; Ghulam Mustafa Jatoi is appointed interim Prime Minister (Aug. 6); Iraq declares Kuwait its 19th province (Aug. 28); Asian Games open in Beijing (Sep. 22); India bags kabaddi gold at Asian (Sep. 29); East and West Germans unite (Oct. 2); Iraq and Iran open embassies after eight years (Oct. 7); Kazakhstan declares sovereignty (Oct. 28); Nawaz Sharif is sworn in as Pakistan Premier (Nov. 6); Lt. General H.M. Ershad quits as Bangladesh President (Dec. 4); Lech Walesa wins Poland's first Presidential poll (Dec. 10); Kasparov regains World chess title (Dec. 27)

1991

Begum Khaleda Zia is appointed Bangladesh Prime Minister (March 19); Soviet Union and China sign border agreement (May 16); Angolan peace accord is signed in Lisbon (May 31); Yugoslav republics of Slovenia and Croatia declare independence (June 25); Century's last eclipse of the moon Airana; carrying 264 Nigerian Hajj pilgrims crashes at Jeddah killing all aboard (July 11); Mr. Mikhail Gorbachev resigns as Communist Party chief (August 21); Azerbaijan declares

independence (August 30); Uzbekistan and Kirgizia declare Independence (August 31); The Soviet republic of Tadzhikistan declares Independence (Sept. 9); Armenia votes for Independence (Sept. 21); Commonwealth summit ends in Harare (Oct. 22); Mr. Boutros-Boutros Ghali of Egypt is elected next UN Secretary-General (Nov. 22); The second summit of G-15 concludes at Caracas (Nov. 29); Ukrainians vote for Independence (Dec. 1); Russia, Ukraine and Byelorussia form Commonwealth of Independent States and declare the Soviet Union defunct (Dec. 8); Eleven former Soviet republics sign a Commonwealth agreement (Dec. 21); Mr. Mikhail Gorbachev resigns as the Soviet President (Dec. 25).

1992

Dr. Boutros-Boutros Ghali takes over as Secretary-General of UN (Jan. 1); China signs Nuclear Non-Proliferation Treaty (March 10); Mauritius becomes republic (March 12); In a referendum in South Africa, Whites vote in favour of ending three centuries of white domination and sharing power with blacks (March 17); UN Security Council imposes trade sanctions and an arms embargo on Libya (March 31); Pravda celebrates 80th birthday (May 6); China explodes a 1,000-kiloton nuclear bomb in Lop Nor (May 21); Slovenia, Croatia and Bosnia-Herzegovina are admitted to the UN, raising its strength of 178 (May 22); Estonia becomes a member of IMF (May 29); Russia joins the IMF (June 2); United Nations Conference on Environment and Development, also called the Earth Summit, is held in Rio de Janeiro (June 7-14); Ousted Panamanian leader, Mr. Manuel Noriega, is sentenced to 40 years in prison in a U.S. jail (July 11); Pandit Ravi Shankar wins the Ramon Magsaysay award for Journalism, literature and communication art (July 31); Georgia is admitted to the UN as the 179th member (July 31); Moldova becomes 168th member of the IMF (Aug. 13); "Operation Earthquake" is launched in Jaffna peninsula (Aug. 21); Yugoslavia formally hands over chairmanship of NAM to Jakarta (Aug. 25); With the admission of Myanmar (Burma), the Philippines, Brunei and Uzbekistan, the membership of NAM rises to 108 (Aug. 30); Tenth NAM summit opens in Jakarta (Indonesia) (Sept. 1); Mr. J.R.D. Tata is the recipient of the 1992 UN Population Award (Sept. 17); Uzbekistan becomes the 171st member of the IMF and the World Bank (Sept. 22); UN General Assembly expels Yugoslavia from membership (Sept. 22); Yugoslavia withdraws from NAM membership (Sept.

30); Germany celebrates second anniversary of its unification (Oct. 3); U.S. Pioneer spacecraft plunges into scorching atmosphere of Venus after a 14-year-long mission (Oct. 9); Former Soviet Foreign Minister, Mr. Eduard Shevardnadze is elected President of Georgia (Oct. 12); Democratic nominee Mr. Bill Clinton is elected 42nd President of United States of America. Senator Al Gore is chosen as Vice-President (Nov. 4); U.S. hands over the last American base—Subic Bay naval base—to Philippines (Nov. 24).

1993

Czechoslovakia breaks into two independent republics of Czech and Slovak (Jan. 1); Haile Selassie—Afghanistan's parliament—is formed (Jan. 2); U.S. President George Bush and Russia's President Boris Yeltsin sign START-II in Moscow's Kremlin (Jan. 3); In Paris, 125 countries sign a treaty banning chemical weapons (Jan. 15); Bill Clinton takes over as 42nd President of U.S. (Jan. 20); Russian President Boris Yeltsin survives impeachment move in Russia's Super Parliament (March 29); Former Yugoslav Republic of Macedonia is admitted as 181st member of UN (April 8); Seventh SAARC summit is held in Dhaka (April 10-11); In a referendum, voters vote for Russian President Boris Yeltsin and his economic policies (April 25); Sri Lankan President Ranasinghe Premadasa is assassinated in a May Day rally in Colombo (May 1); Octavia Lepage succeeds Carlos Andres Perez as interim President of the oil-rich South American nation of Venezuela (May 21); Supreme Court of Pakistan reinstates Nawaz Sharif as Prime Minister, restores his Government and revives National Assembly (May 26); Monaco and Eritrea are admitted as members of UN (May 28); U.S. rains barrage of cruise missiles on Baghdad, capital of Iraq (June 27); Andorra becomes 184th member of UN (July 28); Israel orders ceasefire after massive onslaught on Lebanon (July 31); U.K. ratifies Maastricht Treaty for closer European Union (Aug. 2); U.S. declares Sudan a terrorist state (Aug. 18); U.S. imposes two-year sanctions on both China and Pakistan in retaliation of transfer of Chinese M-11 to Pakistan (Aug. 25); Israeli Parliament approves historic plan to grant limited autonomy to Palestinians after almost three decades of military rule (Aug. 31); Israel and PLO sign a peace agreement in Washington under which limited autonomy is to be given to Palestinians (Sept. 13); South African Parliament votes to give Blacks a role in governing the country (Sept. 23); Russian Parliament building—White House—is captured by

troops loyal to Russian President Boris Yeltsin after hundreds of people are killed or wounded (Oct. 4); UN decides to observe 1994 as Year of the Family (Oct.); China conducts its 39th nuclear test explosion at Lop Nor (Oct. 5); Pakistan People's Party leader Ms Benazir Bhutto is sworn in country's 16th Prime Minister (Oct. 19); UN Day is observed (Oct. 24); Commonwealth Heads of Government Meeting concludes at Limassol in Cyprus (Oct. 25); *Pravda* resumes publication (Nov. 2).

1994

North American Free Trade Agreement (NAFTA) comes into effect (Jan. 1); U.S.-Pakistan joint military exercise begins (Jan. 7); NATO expands its fold to East European nations (Jan. 10); World Economic Forum meets in Davos (Feb. 1); Winter Olympic Games begin in Lillehammer, located north of Oslo (Norway) (Feb. 12); U.S. puts India with Pakistan on NPT issue (Feb. 13); Repatriation of Chakma refugees to Bangladesh begins (Feb. 15); Port enclave Walvis Bay is handed over to Namibia by South Africa (Feb. 28); Bosnia's Muslims and Croats sign pact to create a new federation with the battered ex-Yugoslav republic (March 18); Fourth summit of G-15 ends in New Delhi (March 30); State of emergency is declared in the Zulu-dominated Natal province in South Africa (March 31); Golden jubilee session of ESCAP concludes in New Delhi (April 13); Biggest-ever world trade treaty—Uruguay Round Trade Package—is signed in Marrakesh (Morocco) (April 15); West Indian left-hander Brian Lara breaks Garry Sobers' world record of 365 not out, when he hits 375 in St. John's (Antigua) (April 18); Historic polls in South Africa (April 26-29); Dr. Nelson Mandela is appointed South Africa's first Black President (May 10); Jericho and Gaza Strip are handed over to Palestinians (May 10); Miss India Sushmita Sen wins Miss Universe title in Manila (May 21); South Yemen secedes from United Yemen and declares a separate state (May 21); Mr. Roman Herzog is elected Germany's new President (May 23); More than 250 Muslim pilgrims are trampled to death in a stampede in Mecca, near holy city of Mecca in Saudi Arabia (May 23); Vijayapal Singhania wins Round the World Air Race (May 25); Russian author and Nobel laureate Alexander Solzhenitsyn returns home from 20 years of exile (May 27); U.S. extends MFN status to China (May 27); 50th anniversary of the D-Day Landings in Normandy (June 6); China conducts nuclear test (June 10);

Russia, NATO sign pact (June 22); UN General Assembly readmits South Africa (June 23); South Africa joins Group of 77 as its 130th member (June 25); PLO leader, Mr. Yasser Arafat returns to Gaza Strip, ending 27 years of exile (July 1); Comet Shoemaker-Levy 9 collides with Jupiter (July 17); Brazil wins fourth World Cup in football (July 17); Israel and Jordan agree to put an end to 46-year-old state of belligerency (July 25); Silver Jubilee Anniversary of First Landing on Moon (July 25); XV Commonwealth Games are held in Victoria, Canada (August 18-28); Paris celebrates 50th anniversary of its freedom from Nazi occupation (August 25); Russia ends a half-century of military presence in former East Germany and the Baltics (August 31); UN-sponsored International Conference on Population and Development concludes in Cairo (September 13); The U.S. President, Mr. Bill Clinton and the Russian President, Mr. Boris Yeltsin agree to extend Nuclear Non-Proliferation Treaty (September 29); 12th Asian Games are held in Hiroshima (Japan) (October 2-16); China conducts its second nuclear test of the year at Lop Nor (Oct. 7); The U.S. and North Korea sign accord on nuclear facilities (Oct. 21); Israel and Jordan sign peace accord (Oct. 26); Finland lawmakers overwhelmingly endorse membership in the European Union (Nov. 18); India's Aishwarya Rai is chosen as the Miss World 1994 (Nov. 19); Norway rejects membership of the European Union in a referendum (Nov. 29); Palau becomes the 185th member of the United Nations (Dec. 16).

1995

Belarus joins NATO as 24th member-state (Jan. 13); A powerful earthquake shakes major cities in western Japan, killing about 1,700 people (Jan. 17); Luxembourg Prime Minister Jacques Santer is chosen President of European Union (Jan. 18); U.S. eases trade restrictions against North Korea (Jan. 21); Chinese Long March 2-E rocket explodes destroying U.S.-made satellite Apstar-2 (Jan. 25); Deposed Lesotho's King Moshoeshoe II is reinstated (Jan. 26); Bangladesh writer Taslima Nasreen receives Manismania Swedish literary prize (Jan. 27); Emergency is declared in Ecuador (Jan. 28); U.S. and China enter into seven-year bilateral agreement on commercial space launches (Jan. 31); U.S. space shuttle 'Discovery', piloted by Ms. Eileen M. Collins of U.S. Air Force, roars off on a historic mission for rendezvous with Russia's 'Mir' space station (Feb. 3). A strong

earthquake shakes north Island of New Zealand (Feb. 6); Valentine Day is observed (Feb. 14); Russian space freighter—Progress M-26—docks with 'Mir' orbiting station (Feb. 18); Nepal celebrates 45th National Democracy Day (Feb. 19); Free German Workers' Party is banned (Feb. 26); A Russian capsule carrying first American to fly to space station 'Mir' docks with large orbiting outpost (March 16); 'Endeavour' and seven astronauts touch down California's Mojave desert (March 19); Six persons are killed and thousands injured in Tokyo's subway system after flooding of lethal nerve gas 'Sarin' (March 20); Seven European Union nations decide to abolish border controls among them (March 26); Iraq gains UN permission to sell oil to buy food, medicines and other supplies for its people (April 14); 40th anniversary of Afro-Asian Conference (now called NAM) is celebrated in Bandung (April 24); Eighth SAARC summit begins in New Delhi (May 2); Chinese expedition reaches North Pole (May 6); Jacques Chirac, Conservative Mayor of Paris, finally wins France's presidency (May 7); Miss U.S.A. Chelsi Smith is chosen Miss Universe 1995 and India's Manpreet Brar is chosen as first runner-up (May 13); Dalai Lama names six-year-old Gedhun Choekyi Nyima as 11th incarnation of Panchen Lama (May 14); China conducts an underground nuclear test (May 15); Mrs. Alison Hargreaves, British mother-of-two, becomes first woman to climb Mount Everest unaided and without oxygen cylinders (May 15); Jacques Chirac takes over as President (May 17) and Alain Juppé as Prime Minister of France (May 18); Russian cosmonauts Vladimir Dezhurov and Gennady Strekalov take space walk to prepare 'Mir' space station for a visit from a U.S. crew (May 22); "Underground" wins Golden Palm award at Cannes Film Festival (May 28); South Africa bans capital punishment (June 6); UNESCO commemorates Father of the Nation Mahatma Gandhi in Paris (June 12); U.S. secretly develops spy plane 'Dark Star' (June 14); G-7 leaders meet in Halifax (Nova Scotia), Canada (June 16); Dr. Jonas Salk who developed first vaccine to halt polio dies (June 23); 50th anniversary of signing of UN Charter is observed (June 25); Crown Prince Hamad Bin Khalifa Al-Thani of Qatar deposes his father in a bloodless coup (June 27); European Union leaders pledge to ban nuclear tests (June 27); Myanmar pro-democracy opposition leader and Nobel laureate Aung San Suu Kyi is unconditionally freed by ruling military junta (July 10); Manila-based Asian

Institute of Management wins 1995 Ramon Magsaysay Award for International Understanding (July 26); ASEAN welcomes Vietnam as a seventh member (July 28); Hiroshima (Aug. 6) and Nagasaki (Aug. 9) commemorate the 50th anniversary of the dropping of world's first atomic bombs. U.N. announces September 16 as World Ozone Day (Aug. 11); World's first carphone service is launched (Aug. 24); World's largest germ plasma centre is launched at Xining in China's Qinghai province (Aug. 26); Nepal's Supreme Court orders restoration of the Nepalese Parliament (Pratinidhi Sabha); India, China and South Korea sign an agreement to form a consortium to manufacture Third World's first 100-seater passenger aircraft (Aug. 28); Fourth UN World Conference on Women begins in Beijing (Sept. 4); Nepal Prime Minister Manmohan Adhikari steps down after losing no-trust vote (Sept. 10); U.S. favours permanent membership of the UN Security Council to Germany and Japan (Sept. 11); Sher Bahadur Deuba is sworn in new Nepal Prime Minister; Philippines Supreme Court declares Mrs. Imelda Marcos, widow of former President Ferdinand Marcos, winner in the May elections; Fourth World Conference on Women concludes in Beijing (Sept. 15); Republican Senator Hank Brown introduces an amendment to Pressler Law in U.S. Senate providing for arms supply to Pakistan and restoration of economic relations between Washington and Islamabad (Sept. 19); U.S. Senate approves fresh military aid to Pakistan worth \$ 368 million (Sept. 20); France conducts a new nuclear test (Oct. 2); Republic of South Korea turns 50 as a free independent country (Oct. 3); Costa Rica decides to join NAM (Oct. 4); Irish author Seamus Heaney wins the 1995 Nobel literature prize (Oct. 5); Edward Lewis of the U.S., Christiane Nusslein-Volhard of Germany and Eric Wieschaus of Princeton University in the U.S. share Nobel medicine prize; First planet outside Earth's solar system is discovered by two Swiss scientists (Oct. 9); Chicago University professor Robert E. Lucas Jr. wins the 1995 Nobel economics prize (Oct. 10); American researchers Martin L. Perl of Stanford University and Frederick Reins of University of California-Irvine win 1995 Nobel prize for physics, while two other American scientists Mario Molina and F. Sherwood Rowland share the Nobel prize for chemistry with Dr. Paul Crutzen of the Netherlands (Oct. 11); A volcano in Oita prefecture in Mt. Kunju in western Japan erupts after 320 years

(Oct. 12); Anti-nuclear campaigner Joseph Rotblat and Pughwash conference on science and world affairs which he chairs share 1995 Nobel peace prize (Oct. 13); 11th non-aligned summit opens in Cartagena (Colombia); Colombian President Ernesto Samper Pizano takes over as new chairman of NAM; Iraqi leader Saddam Hussain is sworn in as President for seven more years (Oct. 18); NAM admits Turkmenistan as a member and grants guest status to Ukraine (Oct. 19). Space shuttle 'Columbia' and its crew blast into orbit on the seventh try. (Oct. 20); Israeli Premier, Mr. Yitzhak Rabin, is assassinated. (Nov. 5); Fifth G-15 summit begins in Buenos Aires (Argentina). (Nov. 6); UN General Assembly elects Ghana, Chile, Egypt, Guinea-Bissau and Poland to the Security Council for a two-year term beginning January 1, 1996. (Nov. 8); The Commonwealth suspends Nigeria because of serious violations of the group's principles. (Nov. 11); U.S. decides to quit the UNIDO. (Dec. 3).

1996

The former French President, Mr. Francois Mitterrand, dies of cancer at the age of 70; The two-day SAARC Trade and Commerce Ministers' Conference begins in New Delhi (Jan. 8); The United States acknowledges that India and Pakistan are not bound by the Nuclear Non-Proliferation Treaty (Jan. 18); Asia's largest railway station becomes operational in Beijing (Jan. 21); France explodes the sixth and possibly the last of its series of nuclear tests at the South Pacific atoll of Fangataua. (Jan. 27); Nepal devalues its currency (Feb. 8); NASA launches a spacecraft — unmanned Delta rocket — on a three-year voyage to an asteroid that may contain clues to the birth of the solar system (Feb. 18); Scientists at a German research institute announce the discovery of a new element — number 112, a new metal related to and heavier than zinc, cadmium and mercury (Feb. 22); Israel's antiballistic air defence shield, code-named "Wall", advances a major step in a successful second test launch of the long range Arrow-2 missile at an airbase on its Mediterranean coastline (Feb. 23); The U.S. Senate joins the House of Representatives in urging the U.S. military intervention to defend Taiwan should China attack the island (Mar. 22); Space shuttle 'Atlantis' successfully docks with the Russian space station 'Mir' (Mar. 23); The U.S., Britain and France sign a treaty declaring the South Pacific a nuclear-free zone; At the 68th

annual Academy Awards ceremony in Los Angeles, Mel Gibson's "Braveheart", the epic about a 13th century Scottish patriot, bags five Oscars, including the best picture and best director awards (Mar. 25); The European Commission issues an immediate worldwide ban on British beef exports following reports of mad cow disease (Mar. 27); World's largest bank, Bank of Tokyo-Mitsubishi, begins operation (Apr. 1); North Korean troops enter the truce village of Panmunjon, carrying unauthorised weapons (Apr. 6); The World Heritage Day is celebrated by the International Council of Monuments and Sites (Apr. 18); The Chinese President, Mr. Jiang Zemin, extends an olive branch to arch-rival Taiwan saying Beijing respects the desire of its people to rule themselves and would not post a single soldier there after reunification (Apr. 27); Israel prepares to withdraw its troops out of most of Hebron, the last West Bank town still under occupation (Apr. 29); India elected as the vice-chairman of the World Customs Organisation. (Apr. 30); Mr. Mitsu Sato is re-elected President of the Asian Development Bank (May 2); Mr. Lee Teng-Hui is sworn in as Taiwan's first popularly elected President (May 20), Ang Rita Sherpa, popularly known as 'snow leopard' for his unmatched climbing skill, rewrites history by climbing the world's highest peak, Mount Everest, for the tenth time (May 23); The space shuttle 'Endeavour' and its six astronauts return to earth safely (May 29); World's longest-reigning living monarch, King Bhumibol Adulyadej, celebrates his 50th anniversary on Thailand's throne (June 9); The second UN Conference on Human Settlements (Habitat II) opens in Istanbul Italy decides to rejoin the European Monetary System (June 11). The Awami League, wins the crucial parliamentary elections (June 13). South Asian Development Fund is launched in Dhaka (June 17); Mr. Benjamin Netanyahu is sworn in as Israel's Prime Minister (June 19). India's controversial film *Bandit Queen* of Shekhar Kapur wins the three most prestigious awards at the 13th annual Kine International film festival in Harare (June 20). Russia begins withdrawing its troops from Chechnya (June 28). The world's first laws allowing voluntary euthanasia come into effect in Australia's Northern Territory (July 1). Russia remains opposed to NATO's expansion. An 'Ariane-4' rocket blasts off from French Guiana and places an Arab and a Turkish communication satellite into orbit (July 9). Pakistan buys Iranian mine-hunters and Leclerc tanks from France (July

13); The annual ASEAN ministerial-level meeting, in which India participates for the first time, begins in Jakarta (July 16); Blast rocks Atlanta. Two people are confirmed dead and more than 100 injured at the Olympic Centennial Park (July 27); China conducts its 45th nuclear blast in the deserts at Lop Nor and then declares to join a moratorium on such explosions (July 29); Fascinating evidence found inside a meteorite suggests that life "could" have existed on Mars some 3.6 billion years ago (Aug. 7); Mr. Boris Yeltsin takes the oath of office for a second term as President of Russia, promising to defend democratic freedom (Aug. 9); India blocks forwarding of the Global Nuclear Test Ban Treaty to the full Conference on Disarmament (Aug. 14); The UK-based Indian business tycoon, Dr. Swaraj Paul, 65, is nominated to life peerage and becomes Lord Paul (Aug. 21); Eminent Indian scientist, Prof. C.R. Rao, is awarded the Einstein Gold Medal by UNESCO in recognition of his outstanding contribution to science; Scientists decode the genes of a microbe that lives on the ocean floor, can survive only in a near-boiling water and thrives on carbon dioxide. The study confirms the existence of a third major branch of life (Aug. 23); Thousands of Indians and other Asians staying illegally in the United Arab Emirates (UAE) fly home as a three-month amnesty announced by the UAE draws to a close (Aug. 26); The former South Korean President, Mr. Chun Doo-Hwan, appeals against his conviction and death penalty for mutiny, treason and corruption (Aug. 31); The 20th World Poultry Congress is inaugurated in New Delhi (Sept. 2); The US launches Cruise missile attacks against Iraq targeting air defence targets outside Baghdad and south of the country (Sept. 3); India becomes the 62nd country to ratify the Chemical Weapons Ban Treaty (Sept. 6); The Galileo space probe flies within 260 km of Jupiter's largest moon, Ganymede, taking pictures of its surface (Sept. 7); After a bloody four-year old civil war, Bosnia Herzegovina goes to the polls (Sept. 13); The US space shuttle Atlantis docks with Russia's Mir station to pick up astronaut Shannon Lucid after a record-breaking six months in orbit (Sept. 18); Nepal's Parliament ratifies the Indo-Nepal Mahakali Treaty (Sept. 20); US President, Mr. Bill Clinton, signs the CTBT (Sept. 24); The Chinese and British sign an agreed minute on the handover ceremony for Hong Kong to take place on June 30, 1997 (Sept. 27); An Indian non-governmental organisation, the Kerala

Sastra Sahitya Parishad, wins the 1996 Right Livelihood Award, often called the Alternative Nobel Prize (Oct. 1); Polish poetess Wislawa Szymborska is named winner of the year's Nobel Literature Prize (Oct. 3); The former Chief Justice, Mr. Shahabuddin Ahmed, is sworn in as the 14th President of Bangladesh (Oct. 9); Two scientists Rolf Zinker Nagel of Switzerland and Peter Doherty of Australia share the 1996 Nobel Prize for Medicine, James A. Mirreles of Britain and William Vickrey of Canada for Economics and Bishop Carlos Felipe de Ximenes Belo & Josa Ramos Horta (both of East Timor) bag Nobel Peace Prize (Oct. 11); New Zealand's biggest general elections throw up a hung Parliament (Oct. 12); At the 51st session of the UN, India calls for negotiations on a nuclear weapons convention with adequate provisions for a verification regime (Oct. 18); Liberal Democratic Party coasts to victory in Japan's 41st general elections (Oct. 20); Japan decisively defeats India in the elections to the non-permanent seat of the United Nations Security Council by 142 votes to 40 in the General Assembly (Oct. 21); The world turns 6000 years old (Oct. 23); Pakistan announces plans to fence its entire border with India (Oct. 28); Former Sri Lankan President J.R. Jayewardena passes away at the age of 90 (Nov. 1); The Sixth "Group of 15" summit concludes in Harare with a resolve to oppose moves by developed countries to set the world trade agenda on their terms. (Nov. 5); Mr. William Jefferson (Bill) Clinton is re-elected American President, decisively defeating his Republican Challenger, Mr. Bob Dole. (Nov. 6); The World Food Summit begins in Rome. The US confers honorary citizenship on the Nobel laureate, Mother Teresa (Nov. 16); Space shuttle 'Columbia' thunders in orbit carrying the oldest person ever in space, Mr. Story Musgrave, and a pair of science satellites. (Nov. 19); Miss Greece, 18-year-old Irene Skliva, is crowned Miss World 1996 at Bangalore (Nov. 23); The NASA launches a spacecraft—Mars Pathfinder—to Mars carrying the first-ever interplanetary rover, a six-wheeled cart that will roam the frigid Martian surface in search of rocks. (Dec. 4); Prof. Shivaji L. Sondhi of Delhi University is the recipient of the McMillan award of the US. (Dec. 7); The 127-member World Trade Organisation conference begins in Singapore. (Dec. 9); European Union unveils its new single currency notes, Euros (Dec. 14); Bangladesh celebrates the 25th Anniversary of its birth (Dec. 16); Iran and Turkey give each

other the Most Favoured Nation status. (Dec. 22); Former Haitian President, Mr. Jean Bertrand Aristide, wins 1996 Human Rights Education Award. (Dec. 24).

1997

Costa Rica, Japan, Kenya, Portugal and Sweden elected to UN Security Council for a 2-year term (Jan. 1); Indonesia becomes the 4th most populated country (200 million) after China, India & USA (Jan. 2). According to Berlin-based Transparency International report, India figures among the top ten corrupt nations in the world. Nigeria tops the list followed by Pakistan, while Kenya ranks third (Jan. 3); U.S. Space shuttle 'Atlantis' docks with Russia's 'Mir' space station (Jan. 15); Nawaz Sharif is sworn in as Pakistan's 13th Prime Minister (Feb. 17); Deng Xiaoping of China dies at the age of 92 (Feb. 19); Britain announces a special programme to mark the 50th anniversary of the Independence of India & Pakistan this year (Mar. 4); Nepalese PM, Sher Bahadur Deuba resigns on his failure to mobilise requisite support (Mar. 6); Foreign Ministers of the 14-member Indian Ocean Rim Association for Regional Cooperation, adopt the Association's charter and plan of action (Mar. 7); Lokendra Bahadur Chand sworn in as Nepal's PM (Mar. 12); An extra-ordinary Summit of 54-nation Organisation of Islamic Conference passes a resolution denouncing India and extending support to Pakistan on Kashmir issue (Mar. 23); Both houses of Pakistan's Parliament repeal the controversial Eighth Amendment of the Constitution, which gave the President the power to sack elected governments (Apr. 1); 12th NAM Foreign Ministers Conference concludes in New Delhi, adopting, inter alia, "New Delhi Declaration" on the expansion of the UN Security Council (Apr. 8). At least 100 Indian Haj pilgrims are killed in a devastating fire in Mecca (Apr. 13); India considering joining a 4-nation economic group along with Thailand, Bangladesh & Sri Lanka to boost trade ties (Apr. 24). US House of Representatives strikes off a provision seeking to deny American development aid to India for 1997-98 (May 2); Christine Tanian of France becomes the first woman to reach North Pole on foot after a 2-month expedition (May 6); President Chandrika Kumaratunga's Sri Lanka Freedom Party opens an office at Jaffna after a gap of twenty years (May 7); A powerful earthquake devastates the Khurasan province of eastern Iran killing nearly 1000 people and injuring

another 40,000 (May 10); The Ninth SAARC Summit concludes in Male with the South Asian leaders agreeing to convert the South Asian Preferential Trading Arrangement (SAPTA) into a South Asian Free Trade Area (SAFTA) by 2001 (May 14); Mr. Mobutu Sese Seko "gives up" power and leaves capital Kinshasa to end 32 years of dictatorship (May 16); Mr. Mohammad Khatami, a moderate cleric and a former Culture Minister, is elected Iran's President (May 24); Boris Yeltsin signs an agreement in Paris acknowledging NATO's expansion into Central and Eastern Europe (May 27); Pakistani nuclear scientist, Mr. Qadeer Khan, father of Pakistan's atom bomb, claims that Pakistan can target any Indian city (June 6). USA proposes to invite only Poland, Hungary & Czech Republic to join NATO, to begin with (Mrs. Mary Robinson, Irish President is named as the next UN High Commissioner for Human Rights (June 13); Pol Pot surrenders (June 18). Russia admitted to G-7 Club (June 21); USA and other countries of Nuclear Haves' Club reject NAM proposal of a timetable for nuclear disarmament (June 25). American spacecraft Pathfinder lands on Mars after a 310 million mile journey (July 4). Indo-Nepal talks on Kalapani fail (July 9). ASEAN postpones Cambodia's entry due to internal strife there (July 11). Pakistan developing missiles to carry N-warheads. Missile factory coming up near Islamabad with Chinese assistance (July 21). President Hosni Mubarak of Egypt selected for Jawaharlal Nehru Award for International Understanding for 1995 (July 25). Scotland to have its own Parliament, power to raise taxes, make laws on domestic issues but sovereignty will continue with British Parliament which would be responsible for foreign policy, national security and defence (July 26). Pakistan rules out free trade with India till Kashmir issue is solved (Aug. 5). US has no intention of changing its stand on Kashmir as "a disputed territory" and not an integral part of India. China lending its borders with Pakistan and warns Pakistan over infiltration of Islamic fundamentalists and Taliban forces into its troubled Xinjiang province (Aug. 11). Dalip Kumar awarded the Nishan-e-Istihraz medal by Pakistan (Aug. 15). Nusrat Fateh Ali Khan, the famous Pakistani singer dead (Aug. 17). US Congress favours India's claim on Security Council seat (Aug. 19). India & Bahrain agree to expedite finalisation of an extradition treaty and agreements on terrorism and drug trafficking (Aug. 21). India and Nepal begin talks on Treaty of Peace & Friendship of

1950 (Aug. 21); China announces plans to export a sophisticated nuclear power plant computer system to Pakistan for 300 megawatt Chashma power project (Aug. 22); US keen on "strategic dialogue" with India (Aug. 25); President Ms. Chandrika Kumaratunga opts for a referendum on a new statute for devolution of power to provinces (Aug. 26); Pak Foreign Minister, Gohar Ayub Khan, accuses India of "back tracking on the creation of a Joint Working Group (JWG) on Kashmir (Sept. 1); "Will Pakistan Break up?" written by Pakistani writer Muneer Ahmed confirms ISI engineering Mumbai blasts in March, 1993 (Sept. 2); Princess Diana killed in a car accident in Paris (Sept. 5); Nawab Sharif claims nuclear capability (Sept. 7); The main computer system of Mir Space station fails again (Sept. 8); World Bank lists India among the "big five" developing countries whose share in world trade and output will double in the next 25 years (Sept. 9); The 4-way talks comprising two Koreas, China & USA to seek a peace conference for the divided Korean Peninsula break down following North Korea's insistence on inclusion of withdrawal of US troops from South Korea in the agenda. (Sept. 20); US shuttle Atlantic docks with Russia's MIR Space station to deliver a vital computer to replace the damaged one (Sept. 28); Foreign Ministers of Hungary, Poland & Czech Republic lobby US support for entry into NATO (Sept. 30); Nepalese PM Lokendra Bahadur Chand loses a confidence vote, European Union extends sanctions against Myanmar for another 6 months to pressurise its return to democracy (Oct. 3); Surya Bahadur Thapa appointed next Prime Minister of Nepal by King Birendra (Oct. 6); USA designates LTTE & Harkat-ul-Insar as Terrorist Organisations (Oct. 7); Pakistani Scientist Abdul Qadar Khan discloses that Pakistan was working to develop a smart bomb capable of tracking down targets dodging dummy missiles and attacking tanks and armoured personnel carriers (Oct. 7); US-based Italian playwright, Dario Fo wins 1997 Nobel Literature Prize for "Accidental Death of an Anarchist" (Oct. 8); International Campaign to Ban Landmines" (ICBL) and its coordinator, Jody Williams win 1997 Nobel Prize for Peace (Oct. 10); PM Gujral & Egyptian President Hosni Mubarak express concern at outside interference in Afghanistan; oppose any partial selective expansion of UN Security Council and the need to strengthen NAM; Russian President Yeltsin declares to step down in 2000 and not to seek a third term (Oct. 11);

According to a report, 18 million un-employed citizens constituting 11% of European Union's work force are living off social security pay-outs causing a substantial drain on government finances (Oct. 14); Italian Premier Romano Prodi re-installed by President (Oct. 14); China assures USA that it would stop selling anti-ship cruise missiles to Iran and Iraq. Swiss authorities freeze 12 more bank accounts of former Prime Minister Bhutto & her family (Oct. 18); U.S. Justice Dept. moves court against Microsoft Corp., the world's largest software company, seeking \$ 1 million a day as fine (Oct. 21); Pak Chief Justice summons records of certain long pending land distribution cases involving PM Nawab Sharif; The visiting S. African President, Nelson Mandela calls for an end of UN sanctions against Libya (Oct. 23); British PM, Tony Blair, categorically states that his government had no intention to mediate between India & Pakistan on Kashmir issue (Oct. 24); Developing countries led by India, express their concern about "globalisation" at Edinburg (Oct. 26); According to outgoing Chief of Pak Air Force, Pakistan is currently developing an indigenous fighter "Super 7" with the assistance of China (Oct. 29); Conceding "fundamental" and profound differences with China over human rights, USA still authorises sales of US atomic reactors to China; PM Nawab Sharif yields to the demand of Chief Justice to appoint 5 more judges to the Apex Court (Oct. 31); Iraq turns away 3 US weapons inspectors; Russia & Japan agree to sign a peace treaty by 2000 (Nov. 2); Pak Supreme Court issues notices to Nawab Sharif and 11 others for alleged utterances against the apex court during the recent Government-Judiciary confrontation (Nov. 3); President Yeltsin to visit India in Jan, 1998 (Nov. 4); U.S.A. imposes sweeping new economic sanctions against Sudan for "continued sponsorship of international terrorism" and destabilising neighbouring countries, Former PM Chuan Leekpai is the new PM of Thailand and China offers to hold talks with Dalai Lama provided he renounces his quest for Tibet independence (Nov. 5); Russia signs a ratification on banning chemical weapons (Nov. 6); Iraq sets new terms for UN inspection teams (Nov. 8); China & Russia to have a "strategic partnership" of closer economic and political ties but would not revive the formal alliance of 1950's (Nov. 10); Death sentence is abolished in Georgia with Parliament overwhelmingly approving a special law signed by President Eduard Shevardnadze.

(Nov. 13); Egyptian Interior Minister Hasan El-Ali is sacked for "weak security" at the temple town of Luxor where Islamic militants killed 60 tourists (Nov. 19); Mumbai-born attorney, Clarence J. Sundaram, is conferred the Irving Blumberg Human Rights Award by the American Association for Psychological Rehabilitation (AAPR) for his work for the mentally disabled (Nov. 24); Czech Premier Vaclav Klaus resigns after his government falls over a scandal about his party's campaign financing (Nov. 30); Kyoto conference on global warming begins (Dec. 1); Senilmost Supreme Court judge of Pakistan, Ajmal Mian takes over as Acting Chief Justice of Pakistan (Dec. 3); Iraqi leader Saddam Hussein approves the design for the Baghdad mosque, to be called the "Saddam Grand Mosque", claimed to be world's largest mosque (Dec. 10); Kyoto protocol, the world's first treaty to reduce greenhouse gases, is signed by 10 countries (Dec. 11); The 55-member Organisation of Islamic conference in its eighth summit in Teheran Condemns terrorism in the name of Islam and demands that Israel stop building settlements in occupied Arab land (Dec. 12); The global agreement on treeing the multi trillion-dollar banking, insurance and securities services business is signed in Geneva, under the aegis of the World Trade Organisation (Dec. 13); Chief UN arms inspector Richard Butler, holds a second session of disarmament talks with Iraq's Deputy Prime Minister Tariq Aziz to push for access to some 60 restricted sites (Dec. 15); Singapore airliner with 106 persons on board crashes in southern Sumatra; The Lahore High Court suspends the order of the Acting Chief Election Commissioner, Mr. Justice Mukhtar Junejo, rejecting the nomination papers of Mr. Rafiq Tarar, the ruling Muslim League candidate for the Presidential elections on December 31 (Dec. 19); The Gulf Cooperation Council in its "summit of security" in Kuwait condemns terrorism in all forms, criticises Iraq for evading UN resolution and demands that Israel should return all occupied Arab land to accelerate the West peace process (Dec. 21); Mr. Milan Milutinovic, 55, is elected as new President of Serbia to succeed the republic's long-time strongman, Mr. Slobodan Milosevic (Dec. 22); A French court convicts Ilich Ramiroz Sanchez, better known as "Carlos the Jackal", for 1975 murders of two unnamed French investigators and a Lebanese national and sentences him to life (Dec. 24); South Korea agrees to new reforms with International Monetary Fund, in return for \$10

billions in swift aid by early January to stabilise its floundering markets (Dec. 25); Russia signs a multi billion-dollar deal with China to build a nuclear power plant (Dec. 29); South Africa and China signs an agreement to establish diplomatic relations provoking Taiwan to sever its formal ties with South Africa; In Algiers, roadside attackers and village raiders kill 74 people (Dec. 30); Mr. Rafiq Tarar is elected President of Pakistan (Dec. 31).

1998

Former Norwegian Prime Minister, Ms. Gro Harlem Brundtland elected as Director-General of the World Health Organisation, the first woman to lead the agency (Jan. 28); Kremlin shifts its nuclear button from Moscow to suburban Chernobyl (Mar. 5); India and Pakistan team up for the second time against the West opposing a US proposal to include yarn and fabric forward policy in WTO rules governing the textile trade (Mar. 12); Jiang Zemin re-elected unopposed to a second five-year term as Chinese President, outgoing Premier Li Peng becomes Chairman of Chinese Parliament Hu Jintao, Vice-President and Zhu Rongji is the new Chinese Premier (Mar. 16); UN overwhelmingly votes in favour of slapping an arms embargo on Yugoslavia to force it grant more concession and autonomy to the Kosovo province (Apr. 1); 3911-metre long Akashi Kaiyo Bridge, the longest suspension bridge in the world, linking the main Japanese island of Houshu and the fourth largest island of Shikoku, becomes operational (Apr. 5); Pakistan successfully tests a medium range (1,500 kilometres) missile, Ghauri, capable of carrying a nuclear warhead (Apr. 6); Pakistan starts construction of its first missile boat capable of carrying short-range missiles that can hit targets up to 150 kilometres away (May 1); Russia, Uzbekistan and Tajikistan agree to join hands to combat the growing threat of Islamic terrorism and extremism in Central Asia; China's Air Force successfully tests a new type of air-to-air missile in Bandajin Desert; India conducts three underground nuclear tests at Pokhran signalling its entry into the exclusive Nuclear Club, till now comprising five big powers (May 11); Pre-eminent Indian musician Pandit Ravi Shankar and American Ray Charles receive the 1998 Polar Music Prize in Stockholm (May 12); Bill Clinton offers a resounding declaration of American support for further expansion of the European Union, which he says should eventually embrace

Turkey as well as the whole of 'Central Europe' (May 14); G-8 summit endorses plans to reduce the chances of future global financial meltdowns and calls for greater transparency in government policies and to improve the functioning of the financial markets (May 18); Embattled Indonesian President Suharto, Asia's longest-serving ruler, resigns after 32 years of uninterrupted reign in the face of widespread internal unrest and financial crises and hands over power to his protégé, Vice-President Bacharuddin Jusuf Habibie (May 21); Pakistan conducts five nuclear explosions in the Chagai Hills of Baluchistan province nearly 30 miles from the Afghan border (May 28); Pakistan conducts one more nuclear test and declares that its series of nuclear explosions now stands completed (May 30); Forty-six nations of the Conference on Disarmament demand that India and Pakistan immediately cease testing nuclear arms and join in global move to eliminate weapons (June 2); Chinese scientists build the world's highest observatory in the northern hemisphere—4,300 metres above sea level on the Tibet plateau at Yangbajian (June 8); Russia assures execution of Rs. 6,330-crore Sukhoi deal on time with the delivery of 40 multi-role SU-30 air craft in 2001 as per schedule (June 16); US cuts off all aid to India and Pakistan with the exception of humanitarian aid such as food or the agricultural commodities (June 18); President Clinton visits China (June 24); World Bank approves a \$196 million loan for an agricultural technology project in UP (June 25); Astronomers discover a planet bigger than Jupiter (just 15 light years from Earth) (June 27); USA and China reach agreement on peaceful use of nuclear technology besides signing eleven contracts worth \$3.3 billion including sale of 27 Boeing aircraft in a bid to bridge the yawning trade gap between the 2 countries; Well-known NRI industrialist, Lord Swraj Paul appointed as the first-ever Pro-Chancellor of London's prestigious Thames Valley University (June 29); US farm lobby forces government to ease curbs on US agricultural exports to India; Australia becomes the 15th nation to sign CTBT (July 10); EU backs India on anti-dumping duties on exports of its unbleached cotton fabrics to Europe (July 17); Pakistan finally declines to sign CTBT (July 23); New "non-discriminatory" Constitution comes into force on the Fiji Islands (July 27); Iraqi President Saddam Hussein freezes cooperation with international weapons inspectors to protest the eight-year-old UN economic sanctions (Aug.

5); Russia sharply devalues the rouble in a move to defend the currency (Aug. 17); As reprisal to the bombing of its embassies in Kenya and Tanzania, US fires missiles in Afghanistan targeting Osama Bin Laden, the alleged brain behind these attacks (Aug. 20); Security Council decides to continue the eight-year-old economic sanctions against Iraq (Aug. 21); Pakistani Prime Minister, Mr. Nawaz Sharif announces his intention to make the Quran and the "Sunnah" (Sayings of the Prophet) the law of Pakistan (Aug. 28); Pak National Assembly passes the controversial Islamic Shariah Law Bill (Oct. 9); Indian-born Prof. Amartya Sen is awarded the 1998 Nobel Prize for Economics, becoming the sixth Indian, by birth or citizenship, as also the first Asian to win the prize (Oct. 14); Israelis and Palestinians strike a deal on the interim peace agreement, "The Wye River Memorandum" with extensive help from the US President Clinton and King Hussein of Jordan (Oct. 23); Israeli Prime Minister and Yasser Arafat, Palestinian Authority Chairman, sign an agreement that provides additional territory for Palestinian control in exchange for greater security for Israel (Oct. 24); Pakistan decides to sign both the CTBT and NPT unconditionally (Nov. 13); Tony Blair becomes the first British Prime Minister to address both Houses of the Irish Parliament, thus strengthening the relations between the United Kingdom and the Irish Republic (Nov. 27); Russia to deliver to the Indian Navy in 2002, an upgraded version of the Russian-made "Krivak" battleship, especially designed to carry Prithvi missiles (Dec. 4); Space shuttle Endeavour and its crew return to Earth in triumph, ending first international space station-building mission (Dec. 16); US and UK launch a "strong and sustained" series of military strikes against Iraq for its alleged failure to cooperate with UN weapons inspectors (Dec. 17); US House of Representatives votes to impeach President Bill Clinton (Dec. 19); US President Bill Clinton rejects the Republican call for his resignation and vows to stay in office (Dec. 20); Iraq bans all UN flights into the country following the air strikes (Dec. 24); Bangladesh decides to repeal the Vested Property Act under which Pakistan Government acquired lands and properties of thousands of minorities, especially Hindus during the 1965 Indo-Pak War (Dec. 30).

1999

See Part II : 1999 At A Glance.

11. Known and Unknown Facts

Airport
Largest—King Khalid International Airport outside Riyadh (Saudi Arabia)
Highest—Bangda Airport, Tibet (now China)
Busiest—Chicago International Airport, O'Hare field, Illinois (U.S.A.)

Animals
Tallest on Land—Giraffe
Largest Land Animal—Africa Bush Elephant
Fastest Land Animal—Cheetah

Bay
Largest—Hudson Bay (Northern Canada)

Building
Tallest (Office building)—Petronas Twin Towers, Kuala Lumpur (Malaysia)
Largest Rentable Office Complex—World Trade Centre, New York City (U.S.A.)

Canals
Longest in ancient world—Grand Canal of China (from Beijing to Hangzhou)
Longest big-ship canal—Suez Canal linking Red Sea and Mediterranean Sea.
Busiest Ship Canal—Kiel Canal linking the North Sea with the Baltic Sea in Germany.
Longest irrigation canal—Karakumsky canal from Haun-khan to Ashkhabad, Turkmenistan

Castle
Largest (inhabited)—Windsor Castle (Windsor, Berks.)

Cathedral
Largest—Cathedral Church of the Diocese of New York, St. John the Divine

Cemetery
Largest—Ohlsdorf Cemetery (Hamburg, Germany)

Church
Largest—Basilica of St. Peter in the Vatican City, Rome

Continents
Largest—Asia
Smallest—Australia

Countries
Largest in Area—Russia
Smallest in Area—Vatican City

Crematorium
Largest—Nikol'skiy Arkhangel'skiy Crematorium (East Moscow, Russia)

Dams
Most Massive—Itaipu Dam on Parana river on the boundary between Brazil and Paraguay
Largest (Concrete)—Grand Coulee Dam, on Columbia River, Washington State, U.S.A.

Highest—Rogunskaya dam across river Vakhsh, Tajikistan
Longest—Yacyreta—Aipe dam (across Parana on Paraguay — Argentina border)

Delta
Largest—Sunderbans (Created by Ganga and Brahmaputra in West Bengal, India and Bangladesh)

Desert
Largest—The Sahara (North Africa)

Dome
Largest—Louisiana Superdome, New Orleans, U.S.A.

Estuary
Largest—Ob, North of Russia

Exhibition Centre
Largest—International Exposition Centre in Cleveland, Ohio (U.S.)

Fountain
Tallest—At Fountain Hills, Arizona (U.S.A.)

Gorge
Largest—Grand Canyon (on the Colorado river in north-central Arizona, U.S.A.)

Gulf
Largest—Gulf of Mexico

Hotel
Largest—The Excalibur Hotel in Las Vegas, Nevada, U.S.A.
Most Capacious—The Hotel Rossiya in Moscow (Russia)

Island
Largest—Greenland (renamed Kalaallit Nunaat)
Largest sand island—Fraser Island, Queensland (Australia)
Newest—Pulau Batu Hairan ("Surprise Rock Island") near Kudat in Sabah (Malaysia)

Lagoon
Largest—Lagoa dos Patos (in Brazil)

Lakes
Largest—Caspian Sea (in Azerbaijan, Russia, Kazakhstan, Turkmenistan and Iran)
Deepest—Lake Baikal, Eastern Siberia, Russia
Largest Freshwater—Lake Superior (North America)

Library
Largest—United States Library of Congress, Washington, D.C.
Largest (non-statutory)—New York Public Library, New York

Lighthouse
Tallest—Steel tower near Yamashita in Yokohama (Japan)

Minaret

Tallest—Great Hassan II Mosque, Casablanca, Morocco

Tallest (Free-standing)—Qutab Minar, New Delhi, India

Mosque

Largest (Ruinous)—al Malawiya Mosque of al-Mutawakil in Samarra, Iraq

Largest (in use)—Shah Faisal Mosque, (near Islamabad in Pakistan)

Mountains

Highest Mountain Range—The Himalayas, Asia

Largest Mountain Range—The Andes, South America

Highest Mountain Peak—Mt. Everest, in the Himalayas, Nepal

Tallest—Mauna Kea (White Mountain) on the Island of Hawaii

Lowest Mountain—Bheinn Bhaile

Museums

Oldest—Ashmolean Museum, Oxford

Largest—American Museum of Natural History, New York, U.S.A.

Oceans

Largest—Pacific Ocean

Deepest—Pacific Ocean (deepest part—Marianas Trench)

Palace

Largest—Imperial Palace (Gugong) in Beijing, China

Park

Largest—National Park of North-Eastern Greenland

Peninsula

Largest—Arabia

Planets

Largest—Jupiter

Smallest—Pluto

Coldest—Pluto

Hottest—Venus

Nearest to Earth—Venus

Outermost—Pluto

Brightest and Faintest from Earth—Venus

Population

Most Populous Country—China

Least Populous Country—Vatican City

Most Populous City—Tokyo City

Most Densely Populated Territory—Portuguese province of Macau

Most Sparsely Populated Territory—Antarctica

Largest—Port of New York and New Jersey (U.S.A.)

Busiest—Rotterdam (Netherlands)

Railway

Largest Railway Station—Grand Central Terminal, New York City, U.S.A.

Highest Railway Station—Condor Station in Bolivia (4,786 m)

Longest Railway Platform—Kharagpur, West Bengal, India (833 m)

Religion

Oldest—Hinduism

Largest—Christianity

Roads

Longest motorable—Pan American Highway, from north-west Alaska (U.S.A.) to Santiago (Chile), thence eastward to Buenos Aires (Argentina) and terminating in Brasilia (Brazil), 24140 km long.

Highest—Khardungla pass on the Leh-Manali road (India) at an altitude of 5,602 m

Sea

Largest—South China Sea

Stadium

Largest—Strahov Stadium, Prague, Czechoslovakia

Star

Brightest—Sirius A (Dog Star)

Statue

Tallest—Bronze statue of Buddha in Tokyo (Japan)

Longest—Near Bamiyan (Afghanistan) remains of Sakya Buddha

Straits

Largest—Tartar Straits (between Sakhalin Island and the Russian mainland)

Broadest—Davis Straits (between Greenland and Baffin Island, Canada)

Structure

Tallest—Warszawa Radio Mast at Konstanczyn near Gdansk and Plock, Poland

Telescope

Largest—(Reflector)—On Mount Semirodki, near Zelen Chukskaya in the Caucasus Mountains, Russia

Largest—(Refractor)—At Yerkes Observatory Williams Bay, Wisconsin (belonging to University of Illinois, U.S.A.)

Largest (Radio Telescope)—Giant Meterwave Radio Telescope at Khodad near Pune (Maharashtra)

Temple

Largest—Angkor Wat in Cambodia

Theatre

Oldest (Indoor)—Teatro Olimpico, Vicenza, Italy

Tomb

Largest—Mount Li Tomb, the burial place of Qin Shi Huangdi, the first Emperor of Qin (221 BC)

Tower

Tallest—C.N. Tower, Toronto, Canada

Trees

Largest—General Sharman Tree, California, U.S.A.

Tallest (living)—“Coast Redwood” in Redwood National Park, California, U.S.A.

Tunnel

Longest (Railway)—Seikan Rail Tunnel below the sea bed of the Tsugaru Strait between Tappl Sakl, Honshu, and Fukushima, Hokkaido, Japan (53.85 km)

Longest (Road)—Tunnel under the St. Gotthard Road Tunnel from Goschenen to Alrolo in Switzerland (16.32 km)

Longest and largest canal tunnel—Rove Tunnel on the Canal de Marseille au Rhone in the south of France (7,120 m long, 22 m wide and 11.4 m high).

Valley

Deepest—Kali Gandaki valley between Dhaulagiri and Annapurna ranges of Nepal Himalayas

Wall

Largest—Great Wall of China

Waterfalls

Highest—Salto Angel Falls (Venezuela)

Widest—Khone Falls (Laos)

Greatest—Boyoma (formerly Stanley Falls) (Zaire)

12. Nations of the World

AFGHANISTAN

Islamic State of Afghanistan

Location: A landlocked country, Afghanistan is located in Central Asia. Pakistan is to its east and south, Iran and Turkmenistan to its west, Uzbekistan and Kyrgyzstan to its north. The country has a small border with China to the north-east.

Area: 652,090 sq km

Population (est. 1998): 23.4 million (average annual growth rate: est. 1995-2000, 5.3%)

Capital: Kabul

Largest cities: Kabul, Kandahar, Herat, Mazar-i-Sharif, Qanduz, Charikar, Jalalabad.

Principal rivers: Helmand, Amu Darya (Oxus)

Highest point: Noshah, 7499 m (24,581 ft).

Flag: Black, white and green, inscribed. 'God is Great' and 'There is no other God but Allah and Mohamed Is his Prophet'.

Monetary unit: Afghani

Languages: Pushtu, Dari Persian, other Turkic and minor languages.

Religion: Islam (Sunni, 84%; Shiite, 15%, other, 1%)

Literacy rate: 32.4%

Type of Government: In transition

National name: Jamhuri Afghanistan

Economic summary: Gross domestic product (est. 1996): \$3.3 billion. Average annual growth rate: N.A. Per capita income: \$150. Arable land: 7.91 m.ha; labour force in agriculture: 4,930,000; Principal products: wheat, cotton, fruits, wool, nuts. Labour force in industry: 10.2%; Major products: soap, furniture, shoes, carpets, textiles, cement, coal. Natural resources: natural gas, oil, coal, copper, sulphur, lead, zinc, iron, salt, precious and semi-precious stones. Exports: fresh and dried fruits, raw cotton, natural gas, carpets. Imports: Petroleum products, yarns and textiles,

and food supplies. Major trading partners: Eastern European and CIS countries, Japan and China.

Afghanistan is the world's second largest opium producer (after Myanmar) and a major source of Hashish. Recently, it has overtaken Myanmar.

ALBANIA

People's Socialist Republic of Albania

Location: South-east Europe, Albania has a coastline on the Adriatic Sea. Yugoslavia is to the north and east and Greece to the south.

Area: 28,748 sq km

Population (est. 1998): 3.4 million (average annual growth rate: est. 1995-2000, 0.6%)

Capital: Tirana

Largest cities: Durrës, Elbasan, Shkoder, Vlorë and Korçë.

Principal rivers: Semani, Drini

Highest point: Mount Korab, 2,751 m (9,025 ft.)

Flag: Red with a black double-headed eagle in the centre.

Monetary unit: Lek

Language: Albanian, Greek

Religion: Sunni Muslim, 70%, Orthodox, 20%, Roman Catholic, 10%

Literacy rate: 72%

Type of Government: Democracy

National name: Republika Popullore Socialiste e Shqipërisë

Economic summary: Gross national product (1996): \$2.7 billion. Average annual growth (1995-96): N.A. Per capita income: \$ 820. Arable land: 0.57 m.ha; Labour force: 1,540,000 (1994). Principal products: wheat, corn, potatoes, sugar beets, cotton, tobacco. Labour force in industry: 40%. Major products: textiles, timber, construction

materials, fuels, semi-processed minerals. Exports: minerals, metals, plant and animal products, electricity, fuels, foodstuffs, agricultural materials. Imports: machinery, equipment and spare parts, chemical products, construction materials, foodstuffs, wheat. Major trading partners: Greece, Poland, Hungary, Romania, Germany, France, Bulgaria, Italy.

ALGERIA

Democratic and Popular Republic of Algeria

Location : Located in north-west Africa, Algeria has border in the north with the Mediterranean Sea. Tunisia and Libya are located to its east, Morocco and Western Sahara to its west, and Mauritania, Mali and Niger to its south.

Area : 2,381,741 sq km

Population (est. 1998) : 30.2 million (average annual growth rate : est. 1995-2000, 2.3%)

Capital : Algiers

Largest cities : Algiers, Oran, Constantine, Annaba, Batna, Sétif.

Principal river : Chouf

Highest point : Mount Tahat, 2,918 m (9,573 ft)

Flag : Vertically green and white, with a red crescent and star over all in the centre.

Monetary unit : Dinar

Languages : Arabic (official), French, Berber dialects

Religion : Islam (Sunni), 99%

Literacy rate (1992) : 61.6%

Type of Government : Military

National name : République Algérienne Démocratique et Populaire—El Djemhouria El Djazaïria Demokratia Echaabia

Economic summary : Gross national product (1996): \$43.7 billion. Average annual growth (1995-96): 4.1%. Per capita income: \$1,520. Arable land: 7.09 m.ha; Labour force: 6,190,000; Principal products: wheat, barley, oats, wine, citrus fruits, olives, vegetables, livestock. Labour force in industry: 615,000; Major products: petrochemicals, fertilisers, iron and steel, textiles, transport equipment. Natural resources: petroleum, natural gas, iron ore, phosphates, lead, zinc, mercury. Exports: petroleum and gas, condensates, refined products. Imports: food, capital and consumer goods. Major trading partners: U.S., Germany, France, Spain, Italy, Romania.

ANDORRA

Principality of Andorra

Location : South-west Europe. Andorra is a landlocked country and is located in

the eastern Pyrenees, between France and Spain.

Area : 453 sq km

Population (est. 1997) : 64,000 (average annual growth rate : est. 1995-2000, 0.72%).

Capital : Andorra la Vella.

Principal river : Valira

Highest point : Pla del Estany, 3,011 m (9,678 ft)

Flag : Three vertical stripes of blue yellow, on red, with the arms of Andorra in the centre.

Monetary units : French franc and Spanish peseta

Languages : Catalan (official), French, Spanish

Religion : Roman Catholic

Literacy rate : 100%

Type of Government : Co-Principality

National name : Les Valloes d' Andorra—Vall d' Andorra

Economic summary : Gross domestic product (1994): \$74.5 million. Per capita income: \$11,462. Arable land: 1000 ha; Labour force: 20%; Principal products: oats, barley, cattle, sheep. Labour force in industry: 80%; Major products: tobacco products and electric power; tourism. Natural resources: water power, mineral water. Major trading partners: Spain and France. A free economic zone, member of EEC.

ANGOLA

People's Republic of Angola

Location : West-south Africa. Angola is located on the west coast of Africa. South-West Africa is to its south, Zambia to its east and Zaire and Congo to its north. Cabinda, an enclave in the north, is separated from the rest of Angola by a Zaire corridor to the sea, which includes the Zaire (Congo) estuary.

Area : 1,246,700 sq km

Population (est. 1998) : 12.0 million (average annual growth rate : est. 1995-2000, 2.7%)

Capital and largest cities : Luanda, Huambo, Benguela, Lobito, Lubango

Principal rivers : Cunene, Cuanza, Congo, Cuando.

Highest point : Serra Moco, 2,610 m (8,563 ft)

Flag : Horizontally red over black, with a star and an arc of cogwheel crossed by a machete, all yellow over all in the centre.

Monetary unit : Kwanza

Languages : Bantu, Portuguese (official)

Religion : 9.39m Christians, others animist religion

Literacy rate : 43%

Type of Government : Republic.

Economic summary : Gross national product (1996): \$3.0 billion. Average annual growth (1995-96): 1.3%. Per capita income: \$270. Arable land : 3 m.ha; Labour force : 4.08 m In 1990. Principal agricultural products: coffee, sisal, corn, cotton, sugar, tobacco, bananas. Major industrial products: oil, diamonds, processed fish, tobacco, textiles, cement, processed food and sugar. Natural resources: diamonds, gold, iron, oil. Exports: Crude oil, coffee, diamonds, refined oil, gas, fish and fish products, iron ore, timber, corn. Imports: bulk iron, steel and metals, textiles, clothing. Major trading partners: France, Japan, Brazil, C.I.S. republics, Portugal, U.S., Cuba.

ANTIGUA AND BARBUDA

Location : Comprising three islands of the Lesser Antilles situated in Eastern Caribbean sea. St. Kitts and Nevis islands are to the west and Montserrat and Guadeloupe to the south.

Area : 442 sq km

Population (est. mid-1997) : 63,739 (average annual growth rate : 0.4%)

Capital and largest city : St. John's.

Principal river : There are no significant rivers.

Highest point : Boggy Peak, 402 m (1,319 ft)

Flag : Red, with a triangle based on the top edge, divided horizontally black, blue, white with a rising sun in gold on the black portion.

Monetary unit : East Caribbean dollar

Language : English

Religion : Anglican and Roman Catholic

Literacy rate : 90% (1995)

Type of Government : Constitutional monarchy with British-style parliament

Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$368 million. Real growth rate: -5.9%. Per capita income: \$5,666. Arable land: 18% labour force : 32,254. Labour force in industry: 7%. Principal products: cotton. Major industry: tourism. Exports: clothing, rum, lobsters Imports: fuel, food, machinery. Major trading partners: U.K., U.S., Canada, Caribbean Community and Common Market members.

ARGENTINA

Argentine Republic

Location : South-east of South America. Argentina has a long coastline on the South Atlantic. Bolivia, Paraguay and Uruguay are located to its north and Chile to its west.

Area : 2,800,000 sq km

Population (est. 1998) : 36.1 million (average annual growth rate : est. 1995-2000, 1.5%)

Capital : Buenos Aires

Largest cities : Buenos Aires, Cordoba, Rosario, La Plata, Mendoza, Tucuman.

Principal rivers : Parana, Colorado, Negro, Salado, Chubut

Highest point : Cerro Aconcagua, 6,963 m (22,834 ft).

Flag : Three horizontal stripes of light blue, white and light blue, with the gold Sun of May in the centre.

Monetary unit : Peso

Language : Spanish, English, Italian, German, French

Religion : Predominantly Roman Catholic (nominally)

Literacy rate : 96.2%

Type of Government : Republic

National name : Republica Argentina

Economic Summary : Gross national product (1996): \$295.1 billion. Average annual growth (1995-96): 4.0%. Per capita income: \$8,330. Arable land : 25 m.ha; Labour force : 13,20,000. Principal products: grains, oilseeds, livestock products. Major products: processed foods, motor vehicles, consumer durables, textiles, chemicals. Natural resources: minerals, lead, zinc, tin, copper, iron, manganese, oil, uranium. Exports: oil & fats, fuel, mineral oils, meat, corn, wheat, wool, hides Imports: machinery and electric equipment, crude oil, automotive equipment and parts, iron and steel products, chemicals. Major trading partners: U.S., Brazil, Italy, Chile, Germany, Netherlands, France, Germany, Japan, Spain

ARMENIA

Republic of Armenia

Location : Located in the southern Caucasus, it was the smallest of the former Soviet republics. It is bounded by Georgia on the north, by Azerbaijan on the east, on the south and the west by Turkey and Iran. It is a land of rugged mountains and extinct volcanoes.

Area : 29,800 sq km

Population (est. 1998) : 3.6 million (average annual rate of natural increase : est. 1995-2000, 1.4%)

Capital : Yerevan

Largest cities : Yerevan, Kumayri (formerly Leninakan), Vanadzor, Kirovakan

Principal rivers : Araks, Zangazur

Highest point : Mt. Aragats, 4,090 m (13,418 ft)

Flag : Three horizontal stripes of red, blue and orange

Monetary unit : Dram

Language : Armenian

Religion : Armenian Orthodox, 94%

Literacy : 99%

Type of Government : Republic

National name : Hayastani hanrapetoutlun.

Economic summary : Gross national product (1996): \$2.4 billion. Average annual growth (1995-96): 7.8%. Per capita Income: \$630. The republic is rich in mineral resources, chiefly copper. Molybdenum, gold and silver are also extracted from the mountains. The region has little coal and iron. Manufacturing products include non-ferrous metallurgy, electrical equipment and machinery, chemicals, textiles and cognac. Agricultural crops include wine grapes, fruits, wheat, sugar beets, potatoes, cotton and tobacco. Eighty per cent of the crops are gathered in irrigated land. Major Trading partners : Russia, Turkmenistan, Iran.

AUSTRALIA

Commonwealth of Australia

Location : Located in South-west Pacific Ocean, the country comprises the main island continent of Australia with the Coral and Tasman Seas (Pacific Ocean) to the east and Indian Ocean to the west, and the offshore island of Tasmania. Indonesia, East Timor and Papua New Guinea are to the north off the Torres Strait and across the Timor and Arafura Seas. New Zealand is 1,800 km to the south-east across the Tasman Sea.

Area : 7,682,300 sq km

Population (est. 1998) : 18.4 million (average annual growth rate : est. 1995-2000, 1.1%)

Capital : Canberra.

Largest cities : Sydney, Melbourne, Brisbane, Adelaide, Perth, New Castle, Gold Coast, Wollongong, Hobart, Geelong, Townsville, Launceston, Cairns, Ballarat, Darwin, Bendigo.

Principal rivers : Murray, Darling, Murrumbidgee, Flinders, Diamantina, Ashburton, Fitzroy

Highest Point : Mount Kosciuszko, 2,230 m (7,316 ft)

Flag : The British Blue Ensign with a large star of seven points beneath the Union Flag and in the fly five stars of the Southern Cross, all in white.

Monetary unit : Australian dollar

Language : English

Religion : Christian, 73%, Roman Catholic, 26.0%; Anglican, 23.9%, other Christian, 24.3%, No religion, 12.7%; No Statement, 12.3%; Religion other than Christian 2%.

Literacy rate : 99%

Type of Government : Democratic, federal state system.

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$367.8 billion. Average annual growth (1995-96): 4.0%. Per capita Income: \$20,090. Arable land : 6%; labour force (1994): 7,803,700; principal products: wool, meat, cereals, sugar, wine, grapes, sheep, cattle, dairy products. Major products: machinery, motor vehicles, iron and steel, textiles, chemicals. **Natural resources:** gold, iron ore, bauxite, zinc, lead, tin, coal, oil, uranium, timber. **Exports:** coal, wool, metal ores, wheat, sugar, beef. **Imports:** transportation equipment, petroleum and petroleum products, machinery, appliances, chemicals. Major trading partners: Japan, U.S., U.K., New Zealand, Germany, South Korea, Singapore.

AUSTRIA

Republic of Austria

Location : Austria is located in Central Europe. Germany is to its north-west, Czech and Slovak Federative Republic to its north-east, Hungary to its east, Yugoslavia and Italy to its south and Switzerland to the west. Liechtenstein is between Austria and Switzerland. Austria is a landlocked country but has access to the sea via the Danube river.

Area : 83,858 sq km

Population (est. 1998) : 8.2 million (average annual growth rate : est. 1995-2000, 0.6%)

Capital : Vienna

Largest cities (est. 1992) : Vienna, Graz, Linz, Salzburg, Innsbruck, Klagenfurt, Villach, Wels, Sankt Pölten, Dornbirn.

Principal rivers : Danube, Inn, Mur

Highest point : Grossglockner, 3,798 m (12,462 ft)

Flag : Three horizontal stripes of red, white and red.

Monetary unit : Schilling

Language : German, Slovene, Croatian, Hungarian

Religion : Roman Catholic, 78%; Protestants, 5%; Muslims, 2%; Others, 2.9%; Without Religious allegiance, 8.6%;

Literacy rate : 98%

Type of Government : Federal Republic

National name : Republik Österreich

Economic summary : Gross national product (1996): \$226.5 billion. Average annual growth (1995-96): 1.2%. Per capita income: \$28,110. Arable land : 17%. Labour force (1994): 3,152,952. Principal agricultural products: livestock, forest products, grains, sugar beets, potatoes. Principal products: Iron and steel, chemicals, machinery.

paper and pulp. Natural resources: Iron ore, petroleum, timber, magnesite, aluminium, coal, lignite, cement, copper. Exports: Iron and steel products, timber, paper, textiles, electrotechnical machines, chemical products. Imports: machinery, vehicles, chemicals, iron and steel, metal goods, raw materials, fuels, food stuffs. Major trading partners: Germany, European Community, Eastern Europe, U.S., Japan, European Free Trade Association countries.

AZERBAIJAN

Republic of Azerbaijan

Location : Azerbaijan includes the Nakhichevan Autonomous Republic and the largely Armenian-inhabited Nagorno-Karabakh Autonomous Region, which was declared abolished in 1991. Situated in the eastern area of Transcaucasia, it is bounded in the west by Armenia, in the north by Georgia and the Russian Federation (Dagestan), in the east by the Caspian Sea and in the south by Iran.

Area : 86,600 sq km

Population (est. 1998) : 7.7 million (average annual rate of natural increase : est. 1995-2000, 0.8%). The republic is noted for the longevity of its population.

Capital : Baku

Largest cities : Baku, Gyanda (formerly Kirovabad) and Sumgait.

Principal rivers : Kura, Araks

Highest point : Bazar - Dyuzl, 4,480 m (14,694 ft)

Flag : Three horizontal stripes of blue, red and green, with a white crescent and eight-pointed star in the centre of the red strip

Monetary unit : Manat

Languages : Azerbaijani Turkic, 82.7%; Russian, 5.6%; Armenian, 5.6%; Lezgins, 2.4%
Religion : Moslem, 88%; Others, Orthodox Christian

Type of Government : Republic

Literacy : 97%

National name : Azarbaijchan Respublikasy

Economic summary : Gross national product (1996): \$3.6 billion. Average annual growth (1995-96): -0.4%. Per capita income: \$489. Oil is the most important industry and it was the former Soviet Union's most important oil producing region, but is now in decline. The republic is rich in natural resources: iron, aluminium, copper, lead, zinc, precious metals, sulphur pyrites, limestone and salt. The chief agricultural products are grain, cotton, rice, grapes, fruit, vegetables, tobacco and silk. Major industries: petroleum and natural

gas, petroleum products, oilfield equipment, iron and steel, cement, chemicals and textiles. Labour force : 4.4 m (1993). Trading partners : Mostly C.I.S. and European countries.

BAHAMAS

Commonwealth of the Bahamas

Location : An archipelago of islands is located in Western Atlantic Ocean. It stretches from the Straits of Florida to end with the Turks and Caicos Islands. United States is located to its north-west across the Straits of Florida, and Cuba and Haiti are to its south.

Area : 13,939 sq km

Population (est. 1998) : 293,000 (Average annual growth rate : est. 1995-2000, 1.4%)

Capital and largest city : Nassau, Freeport.

Principal rivers : No significant rivers.

Highest point : Mount Alvernia, Cat Island, 63 m (206 ft).

Flag : Three horizontal stripes of aquamarine, gold and aquamarine, with a black triangle on the hoist.

Monetary unit : Bahamian dollar

Language : English

Religion : Baptist, 79.53; Anglican, 40.87; Roman Catholic, 40.875 and others

Literacy rate : 98%

Type of Government : Independent Commonwealth

Member of Commonwealth of Nations

Economic summary : Gross national product (1994): \$3.35 billion. Real growth rate (1993-94): 4.4%. Per capita income: \$12,342. Labour force: 113,700. Principal agricultural products: fruits, vegetables. Major industrial products: fish, petroleum, pharmaceutical products; tourism. Natural resources: salt, argonite, timber. Exports: lobster, fish, pharmaceuticals, cement, rum. Imports : crude oil, foodstuffs, manufactured goods. Major trading partners: U.S., Italy, Japan, France, Sweden, Singapore

BAHRAIN

State of Bahrain

Location : Middle East. Bahrain is an archipelago of 33 islands in the Gulf about 40 km from the eastern coast of Saudi Arabia. The Qatar peninsula is located to the south-east. The two main islands are Bahrain and Muharraq

Area : 687.75 sq km

Population (est. 1998) : 594,000 (average annual growth rate : est. 1995-2000, 2.2%)

Capital : Manama.

Principal rivers : There are no rivers

Highest point : Jabal al-Dukhan, 134 m (440 ft)

Flag : Red, with white serrated vertical stripes on hoist

Monetary unit : Bahraini dinar

Languages : Arabic (official), English, Farsi, Urdu

Religion : Shia Muslim, 60%; Sunni Muslim, 25%; Christian, 7.3%

Literacy rate : 85%

Type of Government : Parliamentary

National name : Dawlat al Bahrain

Economic summary : Gross domestic product (1994): \$4.5 billion. Real annual growth rate (1993-94): 3%. Per capita income: \$8,223. Labour force (1987) : 85,979; Principal products: eggs, vegetables, fruits. Labour force in industry and commerce: 85%; Major Industries : Petroleum processing and refining, aluminium smelting, ship repairing. Natural resources: oil, fish. **Exports:** oil, aluminium, fish. **Imports:** machinery, oil Industry equipment, motor vehicles, foodstuffs. Major trading partners: Saudi Arabia, U.S., U.K., Japan, India, UAE.

BANGLADESH

People's Republic of Bangladesh

Location : Located in South Asia, Bangladesh has a coastline on the Bay of Bengal. It mainly comprises the delta of the Ganges river. India borders the country to the west, north and east. Burma is located to its south-east.

Area : 148,393 sq km

Population (est. 1998) : 124.0 million (average annual growth rate : est. 1995-2000, 1.6%)

Capital and largest cities : Dhaka.

Other cities : Chittagong, Khulna, Rajshahi, Rangpur, Mymensingh, Comilla, Barisal.

Rivers : Ganges, Brahmaputra

Highest point : Keokradong, 1,230 m (4,034 ft)
Flag : Bottle green with a red disc in the centre

Monetary unit : Taka

Languages : Bengali (official), English

Religion : Islam (official), 86.7%; Hindu, 12.1%

Literacy rate : 38%

Type of Government : Parliamentary

National name : Gana Prajatantri Bangladesh

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$31.2 billion. Average annual growth (1995-96): 5.5%. Per capita income: \$260. Arable land: 67%; Agriculture accounts for 33.5% of

GDP and 70% of employment. Labour force: 51.2m; Principal agricultural products: rice, jute, potatoes, tea, sugar, wheat. Labour force in industry and commerce 11%; Major industrial products: jute goods, textiles, leather, sugar, fertiliser, paper, pharmaceuticals. Natural resources: natural gas, uranium, timber. **Exports:** jute goods, jute, tea, leather, seafood. **Imports:** foodgrains, fuels, raw cotton, yarn, manufactured goods. Major trading partners: U.S., Japan, Germany.

BARBADOS

Location : Located in Eastern Caribbean Sea, Barbados is the most easterly of the Caribbean islands, about 300 km north-east of Trinidad.

Area : 430 sq km

Population (est. 1998) : 263,000 [average annual growth rate : est. 1997, 0.12%]

Capital and largest city : Bridgetown.

Principal rivers : There are no significant rivers.

Highest point : Mount Hillaby, 340 m (1,115 ft)

Flag : Three vertical stripes of blue, gold and blue, with a black trident in the centre.

Monetary unit : Barbados dollar

Language : English

Religions : Anglican, 32.9%; Methodist, 5.9%; Pentecostals, 12.6%; Roman Catholic, 4.4%; other Religions, 16.8%; No stated Religion, 22.9%.

Literacy rate : 97.4%

Type of Government : Independent sovereign state within the Commonwealth

Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$1.7 billion. Real growth rate (1993-94): 4.1%. Per capita income (1994): \$6,505. Arable land: 77%; Principal agricultural products: sugarcane, subsistence foods. Labour force: (1994) : 128,800; Major industrial products: light manufacturing, sugar milling; tourism. **Exports:** sugar and molasses, chemicals, electric components, machinery and transport equipments, clothing. **Imports:** foodstuffs, consumer durables, raw materials, machinery, crude oil, construction materials, chemicals. Major trading partners: U.S., Caribbean nations, U.K., Canada.

BELARUS

Republic of Belarus

Location : Belarus (Belorussia) is situated along the Western Dvina and Dnieper. It is bounded in the west by Poland, north by Latvia and Lithuania, east by Russia and south by the Ukraine.

Area : 207,600 sq km

Population (est. 1998) : 10,300,000 (average annual population growth: est. 1995-2000, -0.1%)

Capital : Minsk

Largest cities : Homel, Vitebsk, Brest, Mahilyou, Bobruisk, Hrodno.

Principal rivers : Inepri, Pripyat, Ivina, Neman

Highest point : Dzyarzhynskaya Mountain, 346 m (1,136 ft)

Flag : Horizontally divided in the proportions 2:1 into a red field and a white band, with a vertical white band charged with the national ornament in the red in the hoist.

Monetary unit : Belarusian ruble

Languages : Belarusian (White Russian)

Religion : Orthodoxy is predominant

Literacy : 98.2%

Type of Government : Republic

National name : Respublika Belarus

Economic summary : Gross national product (1996): \$22.5 billion. Average annual growth (1995-96): 2.6%. Per capita income: \$2,070. The country has rich deposits of rock salt; peat briquettes are also produced. One-quarter of the republic's work force is employed in agriculture. The main agricultural products are grains, milk, meat, eggs, potatoes, vegetables and sugarbeet and also includes elm, maple and white beech. The industry accounts for two-thirds of the country's income. Major industries include food-processing, chemical, textile, artificial silk, flax-spinning, motor vehicle, leather, machine-tool and agricultural machinery industries.

BELGIUM

Kingdom of Belgium

Location : Located in Western Europe, Belgium has a coastline on the North Sea. Netherlands is to the north-east, West Germany to the east, Luxembourg to the south-east and France to the south.

Area : 30,528 sq km

Population (est. 1998) : 10.2 million (average annual growth rate : est. 1995-2000, 0.3%).

Capital : Brussels

Largest cities : Antwerp, Leuven, Ghent, Hasselt, Bruges, Malines, Courtrai, Namur, Mons, Ostend.

Principal rivers : Scheldt, Meuse, Sambre

Highest Point : Botrange, 694 m (2,272 ft)

Flag : Three vertical stripes of black, yellow and red

Monetary unit : Belgian franc

Languages : Flemish (Dutch), 56%; French, 32%; bilingual (Brussels), 11%; German 1%

Religion : Roman Catholic, 75%

Literacy rate : 99%

National name : Royaume de Belgique--Koninkrijk van België

Type of Government : Parliamentary democracy under a constitutional monarch

Economic summary : Gross national product (1996): \$268.6 billion. Average annual growth (1995-96): 1.6%. Per capita income: \$26,440. Arable land: 46%. Labour force (1993) 3,606,000. Principal agricultural products: livestock, poultry, grain, sugar beets, flax, tobacco, potatoes, vegetables, fruits. Labour force in industry, 1,010,000; Major industrial products: fabricated metal, iron and steel, machinery, textiles, chemicals. Exports: chemicals, iron and steel products, pharmaceuticals, diamonds, textile products. Imports: fuels, grains, chemicals, foodstuffs. Major trading partners: European Community, U.S., Eastern Europe.

BELIZE

Location : Central America. Belize has a coastline with the Caribbean Sea. Mexico is located to its north and Guatemala to its west

Area : 22,963 sq km

Population (est. 1998) : 0.2 million (average annual growth rate : est. 1995-2000, 2.5%)

Capital : San Ignacio

Largest cities : Belize City, Orange Walk, Corozal, San Ignacio.

Principal rivers : Hondo, Belize, New River

Highest point : Victoria Peak, 1,122 m (3,691 ft)

Flag : Blue with red band along the top and bottom edges. In the centre a white disc containing the coat of arms surrounded by a green garland

Monetary unit : Belize dollar

Languages : English (official) and Spanish, Maya, Garif.

Literacy rate : 72%

Religion : Roman Catholic, 58%. Protestant 34%

Type of Government : Parliamentary democracy. Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$552 million. Real growth rate (1993-94): 5.1%. Per capita income: \$2,600. Arable land 26%. Principal products: sugarcane, citrus fruits, corn, molasses, rice, bananas, livestock, labour force in industry 10.3%. Major products: timber, processed foods, furniture, rum, copra, natural resources: timber. Exports: sugar, molasses, clothing, lumber, citrus fruits, fish. Imports: fuels, transportation equipment, foodstuffs, textiles, machinery. Major trading partners: U.S., UK, Jamaica, Mexico.

BENIN

People's Republic of Benin

Location : West Africa. The hinterland of Benin runs north from a coastal strip on the Atlantic Ocean. Togo is located to the west of Benin, Nigeria to the east and Upper Volta and Niger to the north.

Area : 112,622 sq km

Population (est. 1998) : 5.9 million (average annual growth rate : est. 1995-2000, 2.8%)

Capital: Porto-Novo

Largest cities : Cotonou, Parakou.

Principal rivers : Queme, Niger

Highest point : Atacora Massif, 635 m (2,083 ft)

Flag : Horizontally yellow over red with a green vertical stripe in the hoist.

Monetary unit : Franc CFA

Ethnic groups : Fons and Adjias, Baribas, Yorubas, Mahis

Languages : French, African languages

Religions: Indigenous, 60%; Christian, 1.1 m; Islam, 0.8 m

Literacy rate (1992) : 37%

Type of Government : Democracy

National name : Republique du Benin

Economic summary : Gross national product (1996): \$2.0 billion. Average annual growth (1995-98): 6.2%. Per capita income: \$350. Arable land: 12%; Labour force: 1,340,000; 60% in agriculture. Principal products: oil palms, peanuts, cotton, coffee, tobacco, corn, rice, livestock, fish. Major industrial products: processed palm oil, palm kernel oil. Natural resources: low grade iron ore, limestone, some off-shore oil. **Exports:** palm and agricultural products. **Imports:** clothing, consumer goods, lumber, fuels, foodstuffs, machinery, transportation equipment. Major trading partners: France and other Western European countries, U.S., Japan, Thailand, China.

BHUTAN

Kingdom of Bhutan

Location : A landlocked country, Bhutan is located in Central Asia, in the eastern Himalayas, with India to the south and Tibet to the north.

Area : 46,500 sq km

Population (est. 1998) : 1.9 million (average annual growth rate : est. 1995-2000, 2.8%)

Capital and largest city : Thimphu.

Principal rivers : Amo-chu, Wang-chu, Machu

Highest point : Khula Kangri, 7,554 m (24,784 ft)

Flag : Diagonally yellow over orange, overall in the centre a white dragon.

Monetary unit : Ngultrum

Language : Dzongkha (official)

Religions : Buddhist, 70%; Hindu, 25% Muslims 5%

Literacy rate: 42%

Type of Government : Monarchy

National name : Druk-yul

Economic summary : Gross domestic product (1994): \$263 million. Real growth rate (1993-94) 10.5%. Per capita income: \$163. Arable land: 3%. Labour force in agriculture: 95%; Principal products: rice, barley, wheat, potatoes, fruits. Major industrial products: cement, handicrafts. Natural resources: timber, hydro-electric power. **Exports:** cardamom, gypsum, handicrafts, fruits, timber, cement. **Imports:** fuels, machinery, vehicles. Major trading partner: India.

BOLIVIA

Republic of Bolivia

Location : West-Central South America. Brazil is to the north and east, Paraguay and Argentina to the south, and Chile and Peru to the west. Bolivia is a landlocked country, but has some access to the sea via the Paraguay and Parana rivers which lead to the River Plate.

Area : 1,098,581 sq km

Population (est. 1998) : 8,000,000 (average annual growth rate : est. 1995-2000, 2.3%)

Judicial Capital : Sucre

Administrative Capital : La Paz

Largest cities : La Paz, Santa Cruz, Beni, Potosi, Cochabamba, Oruro.

Principal rivers : Beni, Mamore, Pilcomayo, Paraguay

Highest point : Sajama, 6,542 m (21,463 ft)

Flag : Three horizontal stripes of red, yellow and green.

Monetary unit : Boliviano

Languages : Spanish, Quechua, Aymara

Religions : Roman Catholic, 95%

Literacy rate : 83.1%

Type of Government : Republic

National name : Republica de Bolivia

Economic summary : Gross national product (1996): \$6.3 billion. Average annual growth (1995-96): 5.0%. Per capita income: \$830. Labour force: 1,700,000; in agriculture: 50%; Principal products: potatoes, corn, rice, sugarcane, bananas. Labour force: 1,700,000; in industry: 19%. Major products: refined petroleum, processed foods, tin, textiles, clothing. Natural resources: petroleum, natural gas, tin, lead, zinc, copper, tungsten, bismuth, antimony, gold, sulphur, silver, iron ore. **Exports:** tin, petroleum, lead, zinc, silver, antimony, gold, coffee, sugar, cotton, natural

gas. Imports: foodstuffs, chemicals, capital goods, pharmaceuticals, transport equipment. Major trading partners: U.S., Argentina, U.K., Belgium, Japan.

BOSNIA-HERZEGOVINA

Republic of Bosnia and Herzegovina

Location: The republic is bounded in the north and west by Croatia, in the east by Serbia and in the south-east by Montenegro. It is virtually landlocked, having a coastline of only 20 km with no harbours.

Area: 51,129 sq km

Population (est. 1998): 4,000,000 (average annual growth rate: 3.9%)

Capital: Sarajevo (Bosnia)

Largest cities: Sarajevo in Bosnia, Banja Luka in Bosnia, Tuzla, Mostar. Mostar is the capital of Herzegovina.

Principal rivers: Sava, Drina, Bosna

Highest point: Maglic, 2,387 m (9,118 ft)

Flag: A white field on which is a blue shield with a white bend and gold fleur de lys.

Monetary unit: Dinar

Languages: Bosnian, written in Latin and Cyrillic.

Religion: Slavic Muslim, 40%; Orthodox, 31%; Catholic, 15%; Protestant, 4%.

Type of Government: Republic

National name: Republika Bosna Herzegovina

Economic summary: Gross domestic product (1994): \$4.6 billion. Per capita income: \$1,307. Labour force (1991 est): 1,026,254; agriculture, 2%; industry 45%. Republic's past dependence on agriculture has decreased due to recent efforts to modernise and develop industry. Mining and manufacturing now predominate in the nation's economy. Agricultural crops include wheat, maize, tobacco, potatoes and plums. Minerals include coal, lignite, iron, bauxite, lead, zinc, mercury and manganese. Manufacturing items are cement, cotton fabrics, cars, sugar and TV sets

BOTSWANA

Republic of Botswana

Location: South Central Africa. Botswana is a landlocked country. Zimbabwe and Zambia are to its northeast, South Africa to the south and South-West Africa to the west and north. A large part of Botswana forms the Kalahari Desert.

Area: 600,360 sq km

Population (est. 1998): 1,600,000 (average annual growth rate: 2.2%)

Capital and largest cities: Gaborone, Francistown, Selebi-Pikwe, Lobatse.

Principal rivers: Chobe, Shashi

Highest point: Tsodilo Hill, 1,375 m (4,511 ft)

Flag: Light blue with a horizontal black stripe, edged white, across the centre.

Monetary unit: Pula

Languages: English, Setswana

Religion: Indigenous beliefs, 50%; Christian, 50%.

Literacy rate: 69.8%

Type of Government: Parliamentary republic

Member of Commonwealth of Nations

Economic summary: Gross national product (1994): \$3.8 billion. Average annual growth (1993-94): 9.8%. Per capita income (1994): \$2,666. Arable land: 2%; Labour force: 400,000; Principal products: livestock, sorghum, corn, millet, cowpeas, beans. Major industrial products: diamonds, copper, nickel, salt, soda ash, potash, coal, frozen beef, tourism. Natural resources: diamonds, copper, nickel, salt, soda ash, potash, coal. Exports: meat products, diamonds, hides, copper, nickel. Imports: machinery, transport equipment, manufactured goods, food, chemicals, mineral fuels, textiles, petroleum products. Major trading partners: South African Customs Union, U.K., U.S., Switzerland.

BRAZIL

Federal Republic of Brazil

Location: Central and East South America.

Uruguay, Argentina and Paraguay are located to the south-west, Bolivia and Peru to the west. To the north of Brazil are Colombia, Venezuela, Guyana, Suriname and French Guyana. It is the fifth largest country in the world, ranking after Russia, Canada, China and the U.S.

Area: 8,547,404 sq km

Population (est. 1998): 165.2 million (average annual growth rate: 1.2%)

Capital: Brasilia

Largest cities: Sao Paulo, Rio de Janeiro, Salvador, Belo Horizonte, Recife, Porto Alegre, Fortaleza, Nova Iguaçu, Belem, Golan, Manaus

Principal rivers: Amazon, Parana, Sao Francisco, Madeira, Jurua, Purus

Highest point: Pico da Neblina, 3,014 m (9,889 ft)

Flag: Green, with yellow lozenge on which is placed a blue sphere, containing 27 white stars and crossed with a band bearing the motto *Ordem e Progresso*

Monetary unit: Real (BRC)

Language: Portuguese

Religion: Roman Catholic, 89%, Protestants, 6.6%

Literacy rate : 83.3%

Type of Government : Federal Republic

National name: República Federativa do Brasil

Economic summary : Gross national product (1996): \$709.6 billion. Average annual growth (1995-96): 8.2%. Per capita income: \$4,400. Arable land: 7%; Labour force: 62,100,499; Principal products: coffee, rice, cattle, tobacco, sugarcane, soyabeans, cocoa. Major products: steel, chemicals, petrochemicals, machinery, motor vehicles, cement, lumber. Natural resources: iron ore, manganese, bauxite, nickel, other industrial metals. **Exports:** coffee, iron ore, sugar, beef, soyabeans, transport equipment, machinery, cocoa beans, footwear. **Imports:** wheat, aluminium, petroleum, machinery, chemicals, pharmaceuticals. Major trading partners: U.S., Japan, Argentina, Netherlands, Germany, Italy, U.K., Chile.

BRUNEI DARUSSALAM

State of Brunei Darussalam

Location : Located in South-East Asia. It is in the north coast of the island of Borneo surrounded by Sarawak (Malaysia).

Area : 5,765 sq km

Population (est. 1998) : 313,000 (average annual growth rate : est. 1995-2000, 2.2%)

Capital and largest city : Bandar Seri Begawan
Principal river : Brunei River

Highest point : Bukit Pagon (on the border with Malaysia), 1,850 m (6,070 ft)

Flag : Yellow, with two diagonal stripes of white over black with the national arms in red placed over all in centre

Monetary unit : Brunei dollar

Ethnic groups : Malay, 67%; Chinese, 15%

Languages : Malay (official), Chinese, English.

Religion : Islam (official religion), 67%; Christian, 10.6%; Buddhist 13%, others, 9.4%

Literacy rate : 88%

Type of Government : Independent sultanate

National name : Negara, Brunei, Darussalam.

Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$4.6 billion. Real growth rate (1993-94): 15.4%. Per capita income: \$16,270. Arable land 1%; Labour force: 89,000. Principal agricultural products: fruit, rice, pepper. Labour force (including Army): 89,000; production of oil, natural gas, services and construction, 47.5%, agriculture, forestry, fishing, 41.9%. Major industrial products: crude petroleum, liquefied natural gas. Natural resources: petroleum, natural gas. **Exports:** crude petroleum, liquefied natural gas. **Imports:** machinery, transport, equipment, manufactured

goods, foodstuffs. Major trading partners: Japan, Thailand, U.K., U.S., Singapore, South Korea.

BULGARIA

People's Republic of Bulgaria

Location : South-east Europe. Located in the eastern Balkans, Bulgaria has a coastline to the east on the Black Sea. Romania is to the north, Yugoslavia to the west and Greece and Turkey are to the south.

Area : 110,994 sq km

Population (est. 1998) : 8.4 million (average annual rate of growth : est. 1995-2000, -0.5%)

Capital : Sofia

Largest cities : Sofia, Plovdiv, Varna, Ruse, Burgas, Stara Zagora, Pleven, Dobrich, Sliven, Shumen

Principal rivers : Danube, Iskur, Maritsa, Tundzha

Highest point : Musala, 2,925 m (9,596 ft)

Flag : Three horizontal stripes of white green and red.

Monetary unit : Lev

Language : Bulgarian

Religion : Bulgarian Orthodox, 90%; Muslim, Catholic, Protestant, Judaic, Armeno-Gregorian

Literacy rate : 98.2%

Type of Government : Republic

National name : Republika Bulgaria

Economic summary : Gross national product (1996): \$9.9 billion. Average annual growth (1995-96): -9.2%. Per capita income: \$1,190. Arable land: 34%; Labour force: 4,300,000; Principal products: grains, tobacco, fruits, vegetables. Labour force in industry: 33%; in agriculture, 33%. Major products: processed agricultural products, machinery, textiles, clothing. Natural resources: metals, minerals, lumber. **Exports:** machinery and transport equipment, fuels, minerals, raw materials, agricultural products. **Imports:** machinery and transportation equipment, fuels, raw materials, metals, agricultural raw materials. Major trading partners: C.I.S. republics, Germany, Turkey, Italy, Greece.

BURKINA FASO

(Upper Volta)

Location : West Africa. Burkina Faso is landlocked country but is the source of tributaries of the Volta River. Mali is located to the north and west, Niger to the east, and Benin, Togo, Ghana and Ivory Coast to the south.

Area : 274,122 sq km

Population (est. 1998) : 11.4 million (average annual growth rate : est. 1995-2000, 2.8%)

Capital : Ouagadougou.
Largest cities : Bobo-Dioulasso, Koudougou, Ouahigouya, Banlora
Principal rivers : Mouhoun (Black Volta), Nakambe (white Volta), Nazinou (Red Volta)
Highest point : Mt. Tema, 749 m (2,457 ft)
Flag : Horizontally red over green with a yellow star over all in the centre.
Monetary unit : Franc CFA
Ethnic groups : Moses, Lobi, Fulanis, Gourounsi, Gourmantche, Senoufo, Boussance, Mande

Languages : French, Tribal languages
Religion : Animist, 65%; Islam, 25%; Roman Catholic, 10%

Literacy rate : 10%
National name : Republique Democratique du Bourkina Fasso

Economic summary : Gross national product (1996): \$2.4 billion. Average annual growth (1995-96): 6.2%. Per capita income: \$230. Arable land: 10%; Labour force: 4,744,000; principal products: millet, sorghum, corn, rice, livestock, peanuts, sugarcane, cotton. Major industrial products: processed agricultural products, light industrial items, brick, brewed products. Natural resources: manganese, limestone, marble, gold, uranium, bauxite, copper. Exports: livestock, peanuts, cotton. Imports: textiles, food and consumer goods, transport equipment, machinery, fuels. Major trading partners: Cote d'Ivoire, Taiwan, France, Thailand, Italy, Nigeria, Japan.

BURUNDI

Republic of Burundi

Location : Central Africa. Burundi is a landlocked country. Lake Tanganyika is the south-west border, with Zaire to its west, Rwanda to the north and Tanzania to the east and south.

Area : 27,834 sq km
Population (est. 1998) : 6.6 million (average annual growth rate : est. 1995-2000, 2.6%)

Capital and largest city : Bujumbura, Kitega
Principal rivers : Kagera, Ruzizi
Highest point : Mt. Heha, 2,665 m (8,809 ft)
Flag : White diagonal cross dividing triangles of red and green, in the centre a white disc bearing three red green-bordered 6-pointed stars.

Monetary unit : Burundi franc
Languages : Kirundi and French (official). Swahili

Religion : Roman Catholic, 62%; Protestant, 5%; Indigenous, 32%
Literacy rate : 35%

Type of Government : Republic

National name : Republika' Uburundi

Economic summary : Gross national product (1996): \$1.1 billion. Average annual growth (1995-96): -8.9%. Per capita income: \$170. Arable land: 43%; Labour force (1993 est.): 1,930,000. Principal agricultural products: coffee, tea, cotton, bananas, sorghum. Major industrial products, light consumer goods. Natural resources: nickel, kaolin, gold, unexploited copper and platinum deposits. Exports: coffee, tea, cotton. Imports: Producer goods, consumer goods, transport equipment, petroleum products. Major trading partners: Belgium, Germany, France, U.S.

CAMBODIA

Republic of Kampuchea

Location : Located in South-east Asia. Cambodia (Kampuchea) has a coastline on the Gulf of Siam. Thailand is to its west and north, Laos to its north and Vietnam to its east and south.

Area : 181,035 sq km
Population (est. 1998) : 10.8 m (average annual growth rate : est. 1995-2000, 2.2%)

Capital : Phnom Penh
Largest cities : Battambang, Kampong Cham
Principal river : Mekong

Highest point : Phnom Aem, 1,813 m (5,947 ft)
Flag : Divided red over blue with a depiction of the temple of Angkor Wat in yellow over all in the centre.

Monetary unit : Riel
Ethnic groups : Khmer, 93%, Chinese, 3%, Vietnamese, 4%

Languages : Khmer (official), French
Religion : Theravada Buddhist
Literacy rate : 35%

Type of Government : Constitutional monarchy

Economic summary : Gross national product (1996): \$3.1 billion. Average annual growth (1995-96): 6.5%. Per capita income: \$300. Arable land: 16%. Principal agricultural products: rice, rubber, corn. Major industrial products: fish, wood and wood products, milled rice. Natural resources: timber, gemstones, iron ore, manganese, phosphate. Exports: natural rubber, rice, pepper, wood. Imports: foodstuffs, fuel, machinery. Major trading partners: Eastern Europe, Vietnam, Republics of CIS, Japan, India.

CAMEROON

Republic of Cameroon

Location : West Central Africa. Cameroon is located on the west coast of Africa, with Nigeria to the north-west, Chad to the north-east, Central

African Republic to the east, and Congo, Gabon and Equatorial Guinea to the south.

Area : 475,442 sq km

Population (est. 1998) : 14.3 million (average annual growth rate : est. 1995-2000, 2.7%)

Capital : Yaounde

Largest cities : Douala, Yaounde, Nkongsamba, Maroua, Bafoussam.

Principal rivers : Sangha, Nyong

Highest point : Mont Cameroun, 4,069 m (13,353 ft)

Flag : Three vertical stripes of green, red and yellow, with a gold star in the centre

Monetary unit : Franc CFA

Languages : French and English (both official); 24 major African language groups.

Religion : Indigenous beliefs, 51%; Christian, 33%; Muslim, 16%

Literacy rate : 63.4%

Type of Government : Republic; one-party presidential regime

National name : Republique du Cameroun

Economic summary : Gross national product (1996): \$8.4 billion. Average annual growth (1995-96): 7.6%. Per capita income: \$610. Arable land: 13%; labour force in agriculture: 74.4%; Principal products: coffee, cocoa, corn, peanuts. Labour force in industry: 5%. Major products: crude oil products, small manufacturing consumer goods, aluminium. Natural resources: timber, some oil, bauxite. Exports: cocoa, coffee, timber, aluminium, petroleum. Imports: consumer goods, machinery, food, beverages, tobacco, fuel. Major trading partners: France, U.S., Western European nations, particularly the Netherlands.

CANADA

Location : Northern half of North America. The United States forms the southern border and the border to the north-west. The territory stretches from the Atlantic Ocean to the Pacific.

Area : 9,976,186 sq km

Population (est. 1998) : 30.2 million (average annual growth rate : est. 1995-2000, 0.9%)

Capital : Ottawa

Largest cities : Toronto, Montreal, Vancouver, Ottawa, Edmonton, Calgary, Winnipeg, Quebec, Hamilton, St. Catharines, Niagara.

Principal rivers : Mackenzie, St. Lawrence, Peace, Yukon, Nelson, Saskatchewan

Highest point : Mount Logan, 5,951 m (19,524 ft)

Flag : Three vertical stripes of red, white and red, with the white of double width and bearing a stylised red maple leaf.

Monetary unit : Canadian dollar

Languages : English, French

Religion : Roman Catholic, 46%; United Church, 16%; Anglican, 10%

Literacy rate : 97.3% (1994)

Type of Government : Confederation with parliamentary democracy

Economic summary : Gross national product (1996): \$569.9 billion. Average annual growth (1995-96): 1.7%. Per capita income: \$19,020. Arable land: 7.47%; labour force (1990): 13,681,000; Principal products: wheat, barley, oats, livestock. Labour force in industry: 75%. Major products: transportation equipment, petroleum, chemicals, wood products. Exports: wheat, petroleum, lumber and wood products, motor vehicles. Imports: electronic equipment, chemicals. Major trading partners: U.S., Japan, U.K., C.I.S. nations, Germany, Mexico, South Korea, Taiwan.

CAPE VERDE

Republic of Cape Verde

Location : Eastern Atlantic Ocean. Cape Verde is a group of 10 islands and 5 islets located about 600 km west of Dakar in Senegal.

Area : 4,033 sq km

Population (est. 1998) : 417,000 (average annual growth rate : est. 1995-2000, 2.9%)

Capital : Praia

Largest city : Mindelo

Principal rivers : There are no significant rivers.

Highest point : Monte Fogo, 2,829 m (9,281 ft)

Flag : A blue field, in the lower half of which are three horizontal stripes of white, red and white, on which are superimposed 10 yellow stars arranged in a circle.

Monetary unit : Cape Verdean escudo

Languages : Portuguese, Creole

Religion : Roman Catholic, 93.2%; Protestant, 6.8%

Literacy rate : 71.6% (1995)

Type of Government : Republic

National name : Republica de Cabo Verde

Economic summary : Gross domestic product (1995): \$472 million. Real growth rate: 4.7%. Per capita income: \$1,000. Arable land: 9%; Labour force in agriculture: 57%. Principal agricultural products: bananas, corn, sugarcane, coconuts. Major industry: fishing. Natural resources: salt, siliceous rock. Exports: fish, textiles. Imports: machinery, petroleum products. Major trading partners: Portugal, Japan, Angola, Zaire, Algeria, Belgium/Luxembourg, Netherlands, Spain, France, Italy, U.S., Germany, Sweden.

CENTRAL AFRICAN REPUBLIC

Location : Central Africa. Chad is located to the north of the Central African Republic, Sudan to east, Zaïre and Congo to its south, and Cameroon to its west.

Area : 622,436 sq km

Population (est. 1998) : 3.5 million (average annual growth rate : est. 1995-2000, 2.1%)

Capital : Bangui

Largest cities : Bambari, Bouar.

Principal rivers : Oubangui, Zaïre, Chari

Highest point : Mt. Gaou, 1,420 m (4,659 ft)

Flag : Four horizontal stripes of blue, white, green and yellow; overall in the centre a vertical red stripe and in the canton a yellow star.

Monetary unit : Franc CFA

Ethnic groups : Mandja, Baya, Banda, Mboum, Mbaka, Azanda, Yakoma, Sara

Languages : French (official) and Sangho, Arabic, Hansa, Swahili

Religion : Protestant and Roman Catholic with animist influence, 50%; Indigenous, 24%; Muslim, 15%; others, 11%

Literacy rate : 60% (1995)

Type of Government : Republic (under military rule)

National name : Republique Centrafricaine

Economic summary : Gross national product (1996): \$1.0 billion. Average annual growth (1995-96): -3.0%. Per capita income: \$310. Labour force in agriculture: 85%; Principal products: cotton, coffee, peanuts, food crops, livestock. Major industrial products: timber, textiles, soap, cigarettes, diamonds, processed food. Natural resources: diamonds, timber. Exports: diamonds, cotton, timber, coffee. Imports: machinery and electrical equipment, petroleum products, textiles. Major trading partners: France, Belgium, Italy, Yugoslavia, Western Europe, Japan, U.S., Algeria.

CHAD

Republic of Chad

Location : Chad is a landlocked country. Libya is located to its north, Sudan to east, Central African Republic to its south and Cameroon, Nigeria and Niger to its west. Chad includes part of the Sahara desert.

Area : 1,284,000 sq km

Population (est. 1998) : 6.9 million (average annual growth rate : est. 1995-2000, 2.6%)

Capital : N'djamena

Largest cities : Sarh, Moundou.

Principal river : Chari

Highest point : Emi Koussi, 3,415 m (11,204 ft)

Flag : Three vertical stripes of blue, yellow and red

Monetary unit : Franc CFA

Ethnic groups : Baguirmi, Kanembou, Saras, Massas, Arabs, Toubous, others

Languages : French and Arabic (official), many tribal languages

Religion : Islam, 44%; Christian, 33%; traditional, 23%

Literacy rate : 48.1% (1995)

Type of Government : Republic

National name : Republique de Tchad

Economic summary : Gross national product (1996): \$1.0 billion. Average annual growth (1995-96): 3.0%. Per capita income: \$163. Arable land: 2%; Labour force: 85%. Principal products: cotton, cattle, sugar, subsistence crops. Labour force in industry: 4%. Major products, livestock and livestock products, textiles, cigarettes. Natural resources: petroleum, unexploited uranium, krolin. Exports: cotton, livestock and animal products. Imports: food, motor vehicles and parts, petroleum products, machinery, cement, textiles. Major trading partners: France, Nigeria, U.S., Cameroon

CHILE

Republic of Chile

Location : South-west of South America. Chile has a coastline on the Pacific Ocean. Argentina and Bolivia are located to its east and Peru to its north. The Andes mountains run the length of the country, forming the border with Argentina. Many islands are included in the Republic, of which Easter Island is about 3,000 km to the west in the Pacific Ocean.

Area : 756,622 sq km

Population (est. 1998) : 14.8 million (average annual growth rate : est. 1995-2000, 1.4%)

Capital : Santiago

Largest cities : Valparaiso, Concepcion, Vina del Mar, Puente Alto, Talcahuano, Antofagasta

Principal rivers : Lon, Maipo, Bio Bio

Highest point : Ojos del Salado, 6,895 m (22,598 ft)

Flag : Two horizontal bands, white and red, with a white star on blue square in top left cant to staff

Monetary unit : Chilean Peso

Language : Spanish

Religion : Roman Catholic, 82%; Protestant, 11%; Small Jewish and Muslim populations

Literacy rate : 95.2% (1995)

Type of Government : Republic

National name : Republica de Chile

Economic summary : Gross national product (1996): \$70.1 billion. Average annual growth

(1995-96): 10.1%. Per capita income: \$4,860. Arable land: 7%; Principal products: grains, wheat, corn, sugar beets, vegetables, wine, livestock. Labour force in industry: 31.3%. Major products: processed fish, transportation equipment, iron and steel, pulp, paper. Natural resources: copper, timber, iron ore, nitrates. Exports: copper, iron ore, paper and wood products, fruits. Imports: vehicles, petroleum, capital goods. Major trading partners: U.S., Japan, European Community, Brazil, Argentina.

CHINA

People's Republic of China

Location: China comprises the main centre of the continent of Asia, with a coastline on the Yellow Sea, East China Sea and South China Sea. North Korea has a border in the north-east, Mongolia is to the north, Commonwealth of Independent States (former U.S.S.R.) is to the north and west, and to the south are Afghanistan, Pakistan, India, Nepal, Bhutan, Myanmar (Burma), Laos and Vietnam.

Area: 9,572,900 sq km

Population (est. 1998): 1255.1 million (average annual growth rate: est. 1995-2000, 0.9%)

Capital: Beijing

Largest cities: Shanghai, Beijing (Peking), Tianjin (Tientsin), Canton, Wuhan, Shenyang (Mukden), Nanjing (Nanking), Chongqing (Chungking), Harbin, Chengdu, Xian, Dalian (Dalian), Jinan, Changchun, Qingdao (Tsingtao), Shenzhen, Talyan, Zhengzhou, Kunming.

Principal rivers: Yangtze (Chang Jiang), Huang He (Yellow River), Xijiang (Sinkiang or Amur River), Heilongjiang (Amur)

Flag: Red with a large star and four smaller stars, all in yellow in the canton

Monetary unit: Yuan

Languages: Chinese, Mandarin; also local dialects

Religion: Officially atheist but traditional religion contains elements of Confucianism, Taoism, Buddhism

Literacy rate: 81.5% (1995)

Type of Government: Communist party led State

National name: Zhonghua Renmin Gongheguo

Economic summary: Gross national product (1996): \$906.1 billion. Average annual growth (1995-96): 10.0%. Per capita income: \$750. Arable land: 10%. Labour force: 567,000,000; labour force in agriculture and forestry: 60%; Principal products: rice, wheat, grains, cotton. Labour force in industry: 25%. Major industrial products: iron and steel, textiles, armaments, petroleum. Natural

resources: coal, natural gas, limestone, marble, metals, hydropower potential. Exports: agricultural products, petroleum, minerals, metals, textiles, garments, telecommunications and recording equipment, illicit drugs. China is illicit producer of opium (bulk production in Yunnan Province). Imports: grains, chemical fertiliser, steel, industrial raw material, machinery and equipment. Major trading partners: Japan, Hong Kong, U.S., Germany, Taiwan, Macau, Singapore, Canada, C.I.S. countries, Italy.

COLOMBIA

Republic of Colombia

Location: North-west of South America. Colombia has coastlines on the Pacific Ocean and Caribbean Sea. Venezuela is located to its north-east, Brazil to its south-east, Peru and Ecuador to the south-west and Panama to its north-west, forming the link with Central America.

Area: 1,141,748 sq km

Population (est. 1998): 37.7 million (average annual growth rate: est. 1995-2000, 1.7%)

Capital: Bogota

Largest cities: Bogota, Medellin, Cali, Baranquilla, Bucaramanga, Cartagena.

Principal rivers: Magdalena, Cauca, Amazon (Amazonas)

Highest point: Pico Cristobal Colon, 5,775 m (18,947 ft)

Flag: Three horizontal stripes of yellow, blue and red, with the yellow of double width.

Monetary unit: Colombian Peso

Language: Spanish

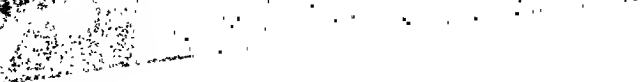
Religion: Roman Catholic, 95%

Type of Government: Republic

Literacy rate (1985): 91% (1995)

National name: Republica de Colombia

Economic summary: Gross national product (1996): \$80.2 billion. Average annual growth (1995-96): 1.2%. Per capita income: \$2,140. Arable land: 4%; Principal agricultural products: coffee, bananas, rice, corn, sugarcane, cotton, tobacco, flowers. Labour force: 12,000,000; Major industrial products: textiles, processed food, beverages, chemicals, metal products, cement. Natural resources: petroleum, natural gas, coal, iron ore, nickel, gold, copper, silver, emeralds. Exports: coffee, fuel oil, cotton, bananas. Imports: machinery, electrical equipment, chemical products, metals and metal products, transportation equipment. Major trading partners: U.S., E.C., Japan, Venezuela, the Netherlands, Brazil, Sweden. Major supplier of cocaine to U.S. and international drug markets, also producer of cannabis and opium.



resources: timber. **Exports:** coffee, bananas, beef, sugar, cocoa. **Imports:** manufactured products, machinery, transportation equipment, chemicals, foodstuffs, fuels, fertiliser. **Major trading partners:** U.S., Central American countries, Germany, Japan, United Kingdom.

COTE D'IVOIRE

Republic of Cote d'Ivoire

Location : West Africa. Ivory Coast (French version of the country is Cote d'Ivoire) has a south-facing coastline on the Gulf of Guinea. Liberia and Guinea are located to the west, Mali and Upper Volta (Burkina Faso) to the north and Ghana to the east.

Area : 320,783 sq km

Population (est. 1998) : 14.6 million (average annual growth rate : est. 1995-2000, 2.0%)

Capital : Yamoussoukro

Largest cities : Abidjan, Bouake

Principal rivers : Sassandra, Bandama, Komoe

Highest point : Mont Nimba, 1,752 m (5,748 ft)

Flag : Three vertical stripes of orange, white and green

Monetary unit : Franc CFA

Ethnic groups : Bete, Agni, Baoule, Senoufou, Malinke

Languages : French and African languages (Diala esp.)

Religion : Indigenous, 60%; Christian, 17%; Islam, 23%

Literacy rate : 40.1%

Type of Government : Republic

National name : Republique de la Cote d'Ivoire

Economic summary : Gross national product (1995-96): \$9.4 billion. Average annual growth (1995-96): 7.3%. Per capita income: \$660. Arable land: 9%; Labour force: 5,718,800; in agriculture: 85%; Principal agricultural products: coffee, cocoa, timber, cotton, corn, sugar, bananas. Major industrial products: food, wood, refined oil, textiles, fertiliser. Natural resources: diamonds, iron ore, crude oil, manganese, cobalt, bauxite, copper. **Exports:** coffee, cocoa, tropical woods. **Imports:** raw materials, consumer goods, fuel. **Major trading partners:** France, U.S., other EC countries, Nigeria, Japan.

CROATIA

Republic of Croatia

Location : Bounded in the north by Slovenia and Hungary and in the east by Serbia, it has an extensive Adriatic coastline well provided with

ports includes the historical areas of Dalmatia, Istria and Slavonia which no longer have administrative status.

Area : 56,538 sq km

Population (est. 1998) : 4.5 million (average annual growth rate : est. 1995-2000, -0.1%)

Capital : Zagreb

Largest cities : Zagreb, Split, Rijeka (Fiume), Osijek

Principal rivers : Sava, Danube, Drava

Highest point : Troglav, 1,913 (6,275 ft)

Flag : Three horizontal stripes of red, white and blue with the arms overall in the centre

Monetary unit : Kuna

Languages : Croatian written with Roman characters

Religion : Predominantly Roman Catholic

Literacy rate : 97%

Type of Government : Republic

National name : Republika Hrvatska

Economic summary : Gross national product (1996): \$18.1 billion. Average annual growth (1995-96): 4.6%. Per capita income: \$3,800. Croatia is highly industrialised. Natural resources include minerals include coal, copper, bauxite, iron ore and salt. The industrial products include crude steel, cement, cellulose, cotton fabric, cotton cloth, woollen yarn, wine and beer. Major agricultural products are wheat, corn, oats, maize, potatoes and plums.

CUBA

Republic of Cuba

Location : Cuba is the most westerly and largest island of the Caribbean Sea. It is located about 150 km south of Florida in the United States and 160 km east of Mexico. Bahamas is to its north-east, Haiti to its east, and Cayman Islands and Jamaica to its south.

Area : 110,860 sq km

Population (est. 1998) : 11.1 million (average annual growth rate : est. 1995-2000, 0.4%)

Capital : Havana

Largest cities : Havana, Santiago de Cuba, Camaguey, Holguin, Santa Clara.

Principal river : Cauto

Highest point : Pico Turquino, 1,971 m (6,467 ft)

Flag : Three blue and two white horizontal stripes, with a live-pointed star in a red triangle at the hoist.

Monetary unit : Cuban Peso

Language : Spanish

Religion : Nominally Roman Catholic before Castro assumed power: 85%.

Literacy rate : 95.8%

Type of Government : Communist state

National name : Republica do Cuba

Economic summary : Gross national product (1994): \$17.8 billion. Real growth rate (1993-94): 17%. Per capita income: \$1,627. Arable land: 23%. Labour force: (1988) : 4,620,800; agriculture, 20%; Industry, 22%; services, 30%. Principal agricultural products: sugar, tobacco, coffee, rice, meat, vegetables, fruits. Major industrial products : processed sugar and tobacco, refined oil products, textiles, chemicals, processed food, metals, light consumer products. Natural resources: metals, primarily nickel, timber. **Exports:** sugar, coffee, nickel, shellfish, tobacco. **Imports:** capital equipment, industrial raw materials, petroleum, consumer products. **Major trading partners:** China, Canada, Japan, Italy, Argentina, Spain, Mexico, Russia.

CYPRUS

Republic of Cyprus

Location : The island of Cyprus is located in Eastern Mediterranean Sea and is about 70 km south of Turkey and 100 km west of Syria.

Area : 9,251 sq km

Population (est. 1998) : 776,000 (average annual growth rate : est. 1995-2000, 1.1%)

Capital : Nicosia (In government-controlled area)

Largest cities: Limassol, Larnaca, Famagusta, Gazi Magusta

Principal rivers : Seranhis, Pedieas

Highest point : Mount Olympus, 1,951 m (6,399 ft)

Flag : White with a copper-coloured outline of the island with two green olive branches beneath.

Monetary unit : Cyprus pound

Languages : Greek, Turkish (official), English

Religion : Greek Orthodox, 78%; Sunni Moslem, 18%; Maronite Latin, Armenian.

Literacy rate : 94.3%

Type of Government : Republic

National name : Kypraki Dimokratia—Kibris Cumhuriyeti

Member of Commonwealth of Nations

Economic summary : Gross national product (1994) : \$7.2 billion. Growth rate (1993-94): 10%. Per capita income: \$9,754. Arable land (1992): 56.7%. Principal agricultural products: vine products, citrus fruits, potatoes, other vegetables. Labour force: 251,406. Labour force in industry: 33%. Major industrial products: beverages, footwear, clothing, cement, asbestos, mining. **Natural resources:** copper, asbestos, gypsum,

building stone, marble clay, salt. **Exports:** citrus fruits, potatoes, grapes, wine, cement, other drugs clothing, machinery. **Imports:** manufactured goods machinery and transportation equipment, petroleum products, foodstuffs. **Major trading partners:** U.K., Greece, Lebanon, Germany, Italy, Japan.

NORTHERN CYPRUS

Turkish Republic of Northern Cyprus

On November 15, 1983, the Turkish Cypriot Parliament proclaimed the northern part of Cyprus as the Turkish Republic of Northern Cyprus (TRNC) which is recognised by Turkey. However, the Greek area controlled by the Cypriot government is the only internationally recognised government of Cyprus.

Location : Northern part of the island of Cyprus. North Cyprus consists of the coastal plains, the Beparmak (Five-finger) Mountains

Area : 3,355 sq. km.

Population (Est. 1994) : Turkish Cypriots, 172,667; Greek Cypriots, 559 (average annual growth rate: 1.3%)

Capital : Nicosia North (Lefkosa)

Monetary unit : Turkish Lira

Language : Turkish (official)

Religion : Moslem, 99%; others, 1%

Literacy rate (1991) : 100%

Highest point : Mount Selmi, 3,350 ft

National name : Kuzey Kıbrıs Türk Cumhuriyeti (Turkish Republic of Northern Cyprus)

Economic summary : Gross national product (est. 1996) : \$ 536 million. Growth rate, 0.5%. Per capita income : \$ 3,950. Arable land (1992) : 56.7%. Principal agricultural products : citrus, potatoes, tobacco, vegetables. Labour force (1992): 74,03; in agriculture, 25%, in industry, 11%. Major industrial products : concentrated citrus, hides, leathers, PVC covered electric cables, footwear, clothing, cosmetics. **Natural resources :** gypsum, pyrite man. **Exports:** dairy products, citrus, live animals, potatoes, readymade clothing, tobacco, hides and leathers. **Imports :** consumer goods, petroleum and lubricants, goods, machinery and transport equipment, chemicals. **Major trading partners :** EC countries (mainly U.K. and Germany), Turkey

CZECH REPUBLIC

The Czech Republic and Slovakia dissolved the Czech and Slovak Federal Republic and became independent states on January 1, 1993. Slovakia is now an independent entity.

Location : The republic is bounded in the west by Germany, north by Poland, east by Slovakia and south by Austria.

Area : 78,864 sq km

Population (est. 1998) : 10.2 million (average annual growth rate : est. 1995-2000, -0.1%)

Capital : Prague

Largest cities : Prague, Brno, Ostrava, Pilsen

Principal rivers : Elbe (Labe), Vltava (Moldau), Morava

Highest point : Snezka, 1,603 m (5,259 ft)

Flag : White and red (horizontal), with a blue triangle of full depth at the hoist, point to the fly (the same flag as the former Czechoslovakia).

Monetary unit : Koruna

Languages : Czech

Religion : Roman Catholic (major) ; other : Protestant, Orthodox

Literacy rate : 99%

Type of Government : Federal Republic

National name : Ceska Republika

Economic summary : Gross national product (1996): \$48.9 billion. Average annual growth (1995-96): 4.4%. Per capita income: \$4,740. In 1992, there were 4,285,000 hectares of agricultural land, mostly state-owned and under cooperative. Livestock is in the state and cooperative sectors. Major agricultural products : Sugar beets, fodder roots, corn, potatoes, wheat, barley, dairy farming, beef cattle and poultry. Natural resources : hard coal, kaolin, clay, graphite. Industries : fuels, ferrous metallurgy, machinery and equipment, motor vehicles, armaments. Major trading partners : C.I.S., Bulgaria, Yugoslavia, Germany, Hungary, Poland, Australia and Switzerland.

DENMARK

Kingdom of Denmark

Location : Located in Northern Europe, Denmark occupies the Jutland peninsula and some 500 islands, including the main islands of Zealand, Funen and Lolland, between the North Sea to the west and the Baltic Sea to the east. West Germany is located to the south and Sweden to the east across the Sea.

Area : 43,075 sq km

Population (est. 1998) : 5.3 million (average annual growth rate : est. 1995-2000, 0.2%).

Capital : Copenhagen

Largest cities : Copenhagen, Aarhus, Odense, Alborg, Esbjerg, Randers, Kolding, Helsingør, Horsens.

Principal river : Gudenå

Highest point : Yding Skovhøj, 173 m (568 ft)
Flag : Red and white Scandinavian cross (Dannebrog)

Monetary unit : Danish Krone

Language : Danish, Faroese, Greenlandic (an Inuit dialect), small German-speaking minority

Religion : Evangelical Lutheran, 90%

Literacy rate : 99%

Type of Government : Constitutional Monarchy

National name : Kongeriget Danmark

Economic summary : Gross national product (1996): \$168.9 billion. Average annual growth (1995-96): 2.5%. Per capita income: \$32,100. Arable land: 61%; Principal agricultural products: meat, dairy products, fish, grains. Labour force: 2,553,900; Major industrial products: Industrial and construction equipment, electronics, chemicals, textiles. Natural resources: crude oil, natural gas, zinc, lead, coal, molybdenum, cryolite, uranium. Exports: meat and dairy products, industrial machinery, textiles and clothing, chemical products, transportation equipment. Imports: industrial raw materials, fuel, machinery and equipment, transport equipment, chemicals, petroleum. Major trading partners: Germany, Sweden, France, U.K., U.S., Norway, Japan.

DJIBOUTI

Republic of Djibouti

Location : North-east Africa. Located on the Gulf of Aden, Djibouti has Somalia to the south-east and Ethiopia to the south and west.

Area : 23,200 sq km

Population (est. 1998) : 652,000 (average annual growth rate : est. 1995-2000, 1.5%)

Capital : Djibouti

Principal river : There are no significant rivers

Highest point : Musa Ali Terara, 2,062 m (6,768 ft)

Flag : Horizontally blue over green, with a white triangle based on the hoist charged with a red star

Monetary unit : Djibouti franc

Languages : Arabic, French, Afar, Somali

Religion : Muslims, 96%; Christian, 4%

Literacy rate : 46%

Type of Government : Republic

National name : Jumhuriyya Djibouti

Economic summary : Gross domestic product (1994): \$524 million. Real growth rate (1993-94): 3.4%. Per capita income: \$926. Principal agricultural products: goats, sheep, camels. Industries: port and maritime support, construction. Exports: hides, cattle, coffee (in transit from Ethiopia). Imports: machinery,

transport equipment, foodstuffs. Major trading partners: Middle East, Asia, Africa, Europe, Bahrain.

DOMINICA

Commonwealth of Dominica

Location : Most northernly windward island, Dominica is located in the Caribbean Sea. Guadeloupe is located to its north and Martinique to its south.

Area : 749 sq km

Population (est. 1997) : 66,633 (annual growth rate: -1.26%)

Capital : Roseau

Largest city : Portsmouth

Principal river : Layou

Highest point : Morne Diablotin, 1,447 m (4,747 ft)

Flag : Green with a cross overall of yellow, black and white pieces, and in the centre a red disc charged with a Sisserou parrot in natural colours within a ring of ten yellow-bordered stars

Monetary unit : French Franc.

Languages : English and French patois

Religion : Roman Catholic, 77%; Protestant, 15%

Literacy rate : 94.1%

Type of Government : Parliamentary Democracy

National name : Republica Dominicana

Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$206 million. Real growth rate: -4.0%. Per capita income: \$2,902. Arable land: 9%; principal products: bananas, citrus fruits, coconuts, cocoa. Labour force (1989) : 30,600; Labour force in industry: 32%. Major industries: agricultural processing, tourism. Exports: bananas, lime juice, coconut oil, cocoa, soap. Imports: machinery and equipment manufactured goods, foodstuffs, chemicals. Major trading partners: UK, Caribbean countries, U.S., Italy, Canada

DOMINICAN REPUBLIC

Location : Caribbean Sea. Dominican Republic occupies the eastern two-thirds of the Hispaniola island. Haiti is located to its west, occupying the rest of the island. Puerto Rico is to the east of Hispaniola island and Cuba and Jamaica to the west.

Area : 48,442 sq km

Population (est. 1998) : 8.2 million (average annual growth rate: 1.7%)

Capital : Santo Domingo

Largest cities : Santo Domingo, Santiago de los Caballeros, La Vega, San Pedro

Principal river : Yaque del Norte

Highest point : Pico Duarte, 3,175 m (10,417 ft)

Flag : Blue and red, quartered by a white cross

Monetary unit : Peso Oro

Language : Spanish, English widely spoken

Religion : Roman Catholic, 90%

Literacy rate : 82% (1995)

Type of Government : Representative democracy

National name : Republica Dominicana

Economic summary : Gross national product (1996): \$12.8 billion. Average annual growth (1995-96): 7.6%. Per capita income: \$1,600. Arable land: 23%. Principal agricultural products: sugarcane, coffee, cocoa, tobacco, banana. Labour force: 2,600,000. Labour force in industry: 18%. Major industrial products: processed sugar, textiles, cement, nickel, bauxite and gold mining. Natural resources: nickel, gold, silver. Exports: sugar, nickel, coffee, tobacco, gold, cocoa, bauxite. Imports: foodstuffs, petroleum, industrial raw materials, chemicals and pharmaceuticals. Major trading partners: U.S., including Puerto Rico, EC.

ECUADOR

Republic of Ecuador

Location : North-west of South America. Ecuador has a coastline on the Pacific Ocean. Colombia is to its north and Peru to its east and south. The Galapagos Islands (Colon Archipelago), 1,000 km off the coast, are part of Ecuador.

Area : 275,630 sq km

Population (est. 1998) : 12.2 million (average annual growth rate: est. 1995-2000 2.0%)

Capital : Quito

Largest cities : Guayaquil, Quito, Cuenca, Ambato, Portoviejo, Esmeraldas, Babamba

Principal rivers : Napo, Pastaza, Cuyabeno

Highest point : Chimborazo, 6,267 m (20,561 ft)

Flag : Three horizontal stripes of yellow, blue and red, with the yellow of double width and in the centre overall the national arms

Monetary unit : Sucre

Languages : Spanish (by 90% of population), Quechua, Jbaro

Religion : Roman Catholic, 95%

Literacy rate : 90% (1995)

Type of Government : Republic

National name : Republica del Ecuador

Economic summary : Gross national product (1995): \$17.5 billion. Average annual growth

(1995-96): 3.3%. Per capita income: \$1,500. Arable land : 6%. Principal agricultural products: bananas, coffee, cocoa, sugarcane, fruits, corn, potatoes, rice. Labour force: 2,800,000; Labour force in industry: 21%; Major industrial products: processed foods, textiles, fish, chemicals, petroleum. Natural resources: petroleum, fish, silver, gold. Exports: petroleum, shrimp, bananas, coffee, cocoa, fish products. Imports: agricultural and industrial machinery, industrial raw materials, foodstuffs, chemical products, transportation and communication equipment. Major trading partners: U.S., Latin America, EC, Caribbean, Japan.

EGYPT

Arab Republic of Egypt

Location : North-east Africa. Egypt forms the north-east corner of Africa, with an extension into Sinai. Libya is located to its west, Sudan to its south, with the Mediterranean Sea forming the northern border, and the Red Sea and Israel the eastern border.

Area : 1,001,449 sq km

Population (est. 1998) : 85.7 million (average annual growth rate : est. 1995-2000, 1.9%)

Capital : Cairo

Largest cities : City of Cairo, Greater Cairo, Alexandria, Giza, Shubra el Khayma, El Mahalla el Kubra.

Principal river : Nile

Highest point : Mount Catherine (Jabal Katina), 2,642 m (8,668 ft)

Flag : Three horizontal stripes of red, white and black, with the national emblem in the centre in gold

Monetary unit : Egyptian pound

Language : Arabic

Religion : Islam, 93%; Christian (mostly Coptic), 7%

Literacy rate : 51% (1995)

Type of Government : Republic

National name : Jumhuriyah Misr al-Arabiya

Economic summary : Gross national product (1996): \$64.3 billion. Average annual growth (1995-96): 5.4%. Per capita income: \$1,080. Arable land: 3%. Labour force in industry: 20%. Principal products: cotton, wheat, rice, corn. Major industrial products: textiles, processed foods, tobacco manufactures, chemicals, fertilisers, petroleum and petroleum products. Natural resources: crude oil, natural gas, manganese, iron ore, phosphates, gypsum, tungsten. Exports: cotton, rice, petroleum, cement, manufactured goods. Imports: foodstuffs, machinery, fertilisers, wood. Major trading partners: Western Europe, Eastern Europe, Japan, U.S.

EL SALVADOR

Republic of El Salvador

Location : Central America. El Salvador has a coastline on the Pacific Ocean. Guatemala is located to its north-west and Honduras to its north and east.

Area : 21,041 sq km

Population (est. 1998) : 6.1 million (average annual growth rate : est. 1995-2000, 2.2%)

Capital : San Salvador

Largest cities : San Salvador, Santa Ana, Mojicanos, San Miguel.

Principal rivers : Lempa, San Miguel

Highest point : Volcan de Santa Ana, 2,381 m (7,812 ft)

Flag : Three horizontal stripes of blue, white and blue, the white stripe charged with the arms of the Republic.

Monetary unit : Colon

Language : Spanish

Religion : Roman Catholic 90%

Literacy rate : 72% (1995)

Type of Government : Republic

National name : Republica de El Salvador

Economic summary : Gross national product (1996): \$9.9 billion. Average annual growth (1995-96): 2.6%. Per capita income: \$1,700. Arable land: 27%; Labour force: 1,700,000; labour force in manufacturing: 16%; Principal agricultural products: coffee, cotton, corn, sugar, rice, sorghum. Labour force 1,700,000; in agriculture 40%. Major industrial products: processed foods, clothing and textiles, petroleum products. Natural resources: hydro and geothermal power, crude oil. Exports: coffee, cotton, sugar. Imports: machinery, automotive vehicles, petroleum, foodstuffs, fertiliser. Major trading partners: U.S., Guatemala, Japan, Germany, Mexico, Venezuela, Costa Rica.

EQUATORIAL GUINEA

Republic of Equatorial Guinea

Location : West Central Africa. Equatorial Guinea comprises Rio Muni on the west coast of Africa, with Gabon to the south and east and Cameroon to the north, the Island of Bioko (formerly Macias Nguema Biyogo or Fernando Poo) in the Gulf of Biafra; the Island of Pagalu (formerly Annobon) in the Atlantic Ocean off the coast of Gabon.

Area : 28,051 sq km

Population (est. 1998) : 430,000 (growth rate: est. 1995-2000, 2.6%)

Capital : Malabo

Largest cities : Malabo, Bata

Principal rivers : Campo, Benito, Muni
Highest point : Pico de Moca (Moka), 2,850 m (9,350 ft)

Flag : Three horizontal stripes of green, white and red, a blue triangle based on the hoist; in the centre the national arms.

Monetary unit : Franc CFA

Languages : Spanish (official), English, Fang, Bubi, Creole

Religions : Roman Catholic, Protestant, traditional

Literacy rate : 79% (1995)

Type of Government : Unitary Republic

National name : República de Guinea Ecuatorial

Economic summary : Gross national product (1994): \$133 million. Per capita income (1994): \$342. Real growth rate: -28.7%. Land used for agriculture, 13%; Labour force: 76%; Principal agricultural products: cocoa, wood, coffee. Natural resources : wood, crude oil. Exports: cocoa, wood, coffee. Imports foodstuffs, textiles, machinery. Major trading partners: Spain, Italy, France, the Netherlands, Germany.

ERITREA

Location : Horn of Africa (Central Eastern Africa). Sudan is to the north and west, Red Sea to the east, Djibouti and Ethiopia to the south.

Area : 123,300 sq km

Population (est. mid 1997) : 3.6 million (average annual growth rate : 6.4%)

Capital : Asmara

Largest cities : The ports of Massawa and Assab.

Principal river : Barka (Seasonal)

Highest point : Ramlo, 2,130 m (6,986 ft)

Flag : The flag is divided into segments by a red triangle based on the hoist on which is a green olive wreath and branch. The upper segment is green and the lower light blue.

Monetary unit : Birr.

Languages : Afar, Bilen, Kunama, Nara, Arabic, Teda, Saho, Tigre, Tigrinya

Religion : Islam and Eritrean Orthodox Christianity.

Literacy : 20%

Type of Government : Transitional

National name : Eritrea

Economic summary : Gross national product (1994) \$329 million. Average annual growth (1993-94) -1.8%. Per capita income (1994): \$95. Main manufacturing industries are: textile, leather and food products. Important crops: Cotton, wheat and coffee. Major mineral resources: Salt and copper. Major trading partners: Ethiopia, Saudi Arabia, Yemen, Italy, Germany, U.S., U.K.

ESTONIA

Republic of Estonia

Location : The republic is bounded in the west and north by the Baltic Sea, the gulfs of Riga and Finland in south-west and north, east by Russia and south by Latvia. It is a mainly lowland country with numerous lakes.

Area : 45,100 sq km

Population (est. mid-1997) : 1.44 million (average annual rate of natural increase -1.14%)

Capital : Tallinn

Largest cities : Tallinn, Tartu, Kohtla-Järve, Narva and Pärnu

Flag : Three horizontal stripes of blue, black and white

Monetary unit : Kroon

Languages : Estonian (official), Latvian, Lithuanian, Russian and others

Religion : Lutheran, 78%; Orthodox, 19%

Type of Government : Republic

National name : Eesti Vabariik

Literacy rate : 100%

Economic summary : Gross national product (1996): \$4.5 billion. Average annual growth (1995-96): 4.0%. Per capita income \$9,060. Labour force (1993) : 681,000; industry and construction, 42%; agriculture and forestry 13%. There are rich oil-shale deposits. There are extensive peat deposits. The other minerals found are phosphorites and super-phosphates. Farming is concentrated on milk and meat production. The agricultural products are grain, potatoes, vegetables, meat, milk and eggs. Industry covers steel, timber, paper, cement, fabrics, horology, footwear, knewear, butter, etc. Major trading partners : Russia and other four Soviet republics, Finland, the West

ETHIOPIA

People's Democratic Republic of Ethiopia

Location : North-east Africa. Sudan is located to the west of Ethiopia, Kenya to its south, Somalia to the south and east and Djibouti to its north-east. The northern province of Eritrea is on the Red Sea coast.

Area : 1,038,000 sq km

Population (est. 1993) : 22.1 million (average annual growth rate : est. 1993-2000 3.2%)

Capital : Addis Ababa

Largest cities : Addis Ababa, Asmara

Other major cities : Dire Dawa, Gondar, Mekele

Principal rivers : Blue Nile (Abay), White Nile

Other rivers : Tana, Sobat, Sobat

Highest point : Ras Dashen, 4,620 m (15,155 ft)

Flag : Three horizontal stripes of green, yellow and red

Monetary unit : Birr

Languages : Amharic (official), English, Orominga, Tigrigna

Religion : Ethiopian Orthodox, 40%; Islam, 45%; traditional, 12%; others, 5%

Literacy rate : 36% (1995)

Type of Government : Federal Government

Economic summary : Gross national product (1996): \$6.0 billion. Average annual growth (1995-96): 10.7%. Per capita income: \$100. Arable land: 12%; Principal agricultural products: coffee, barley, wheat, corn, sugarcane, cotton, oilseeds, livestock. Major industrial products: cement, cotton textiles, refined sugar, processed foods, refined oil. Natural resources: potash, copper, gold, platinum. Exports: coffee, leather products, gold, petroleum. Imports: machinery and equipment, pharmaceuticals, chemicals. Major trading partners: Germany, U.S., Japan, Italy, Djibouti, South Yemen, France, Saudi Arabia.

FIJI

Republic of Fiji

Location : Located in South Central Pacific Ocean, Fiji includes main islands Viti Levu and Vanua Levu and 840 islands and islets, of which about 100 are permanently inhabited. New Zealand is about 2,000 km to the south. The island of Rotuma is part of the territory.

Area : 18,333 sq km

Population (est. 1998) : 822,000 (average annual growth rate : est. 1995-2000, 2.5%)

Capital : Suva (on Viti Levu)

Other major city : Lautoka

Principal rivers : Rewa, Sigatoka, Navva, Nodi, Ba

Highest point : Tomaniivi (Mount Victoria), 1,323 m (4,341 ft)

Flag : Light blue with the Union Flag in the canton and the shield of Fiji in the fly.

Monetary unit : Fijian dollar

Languages : Fijian, Hindustani, English (official)

Religion : Christian, 52%; Hindu, 38%; Islam, 8%; others, 2%

Literacy rate : 91.6% (1995)

Type of Government : Republic

Economic summary : Gross domestic product (1994): \$1.83 billion. Real growth rate (1993-94): 10.8%. Per capita income: \$2,369. Arable land: 8%. Labour force (1992): 265,337; in agriculture: 60%; Principal agricultural products: sugar, copra, rice, ginger. Major industrial products: refined sugar, gold, lumber. Natural resources: timber,

fish, gold, silver. Exports: sugar, copra, processed fish, lumber, gold, clothing. Imports: foodstuffs, machinery, manufactured goods, fuels, chemicals. Major trading partners: E.C., Australia, New Zealand, Japan, U.S.

FINLAND

Republic of Finland

Location : Located in Northern Europe, Finland has a coastline on the Baltic Sea. The Gulf of Bothnia is to the west and Gulf of Finland to the south. To the east is the C.I.S. and Sweden to the west. There is also a border with Norway to the north.

Area : 337,009 sq km

Population (est. 1998) : 5.2 million (average annual growth rate : est. 1995-2000, 0.3%)

Capital : Helsinki

Largest cities : Helsinki, Tampere, Espoo, Turku, Vania.

Principal rivers : Paatsjoki, Torniojoki, Kemijoki, Kokemaenjoki

Highest point : Haltiatunturi, 1,342 m (4,344 ft)

Flag : White with a blue Scandinavian cross

Monetary unit : Markka

Languages : Finnish, Swedish

Religion : Evangelical Lutheran, 90%; Greek Orthodox, 0.1%

Literacy rate : 100%

Type of Government : Constitutional Republic

National name : Suomen Tasavalta—
Republican Finland

Economic summary : Gross national product (1996): \$119.1 billion. Average annual growth (1995-96): 3.8%. Per capita income: \$23,240. Arable land: 8.3%; Principal agricultural products: dairy products, meat products, cereals, sugar beets, potatoes. Labour force: 2,470,000 in mining and manufacturing: 21%; Major products: metal manufactures, forestry and wood products, refined copper, ships, electronics. Natural resources: timber. Exports: timber, paper and pulp, ships, machinery, iron and steel, clothing, footwear. Imports: petroleum and petroleum products, chemicals, transportation equipment, machinery, textile yarns. Major trading partners: Sweden, Germany, U.K., U.S., France, Russia, Denmark, Norway, Netherlands.

FRANCE

French Republic

Location : Located in Western Europe, France has coastlines on the North Sea, Atlantic Ocean and Mediterranean Sea. Belgium and Luxembourg

are to the north, West Germany to the north-east, Switzerland and Italy to the east and Spain to the south-west. Corsica is off the coast to the south-east in the Mediterranean Sea.

Area : 543,965 sq km

Population (est. 1998) : 58.7 million (average annual growth rate : est. 1995-2000, 0.3%)

Capital : Paris

Largest cities : Paris, Marseilles, Lyons, Toulouse, Nice, Nantes, Strasbourg, Bordeaux.

Principal rivers : Rhine, Loire, Rhone, Seine, Garonne, Saone

Highest point : Mont Blanc, 4,807 m (15,771 ft)

Flag : The Tricolour of three vertical stripes of blue, white and red.

Monetary unit : French Franc

Language : French, declining regional dialects

Religion : Roman Catholic, 81%; Protestant, 1.7%; Jewish, 1.2%; Muslim, 5%

Literacy rate : 99%

Type of Government : Republic

National name : Republique Francaise

Economic summary : Gross national product (1996): \$1,533.6 billion. Average annual growth (1995-96): 1.4%. Per capita income: \$26,270. Arable land: 32%; principal agricultural products: cereals, foodgrains, livestock and dairy products, wine, fruits, vegetables. Labour force (1992) : 22,302,600; in industry: 31.3%. Major industrial products: chemicals, automobiles, processed foods, iron and steel, aircraft, textiles, clothing. Natural resources: coal, iron ore, bauxite, fish, forests. Exports: textiles and clothing, chemicals, machinery and transport equipment, agricultural products. Imports: machinery, crude petroleum, chemicals, agricultural products. Major trading partners: Germany, Italy, U.S., Belgium, Luxembourg, U.K., Netherlands, Spain, Japan.

GABON

Gabonese Republic

Location : West Central Africa. Located on the Atlantic coast, Gabon has Congo to the east and south and Equatorial Guinea and Cameroon to the north.

Area : 267,667 sq km

Population (est. 1998) : 1.2 million (average annual growth rate : est. 1995-2000, 2.8%)

Capital : Libreville

Largest cities : Port-Gentil, Masuku (formerly Franceville)

Principal river : Ogooue

Highest point : Mont Iboundji, 1,580 m (5,185 ft)

Flag : Three horizontal stripes of green, yellow and blue.

Monetary unit : Franc CFA

Ethnic groups : Baleke, Obamba, Bakola, Shake, Pongwes, Adumas, Chiras, Panu and Lumbu

Languages : French (official) and Bantu dialects

Religion : Christian, 55-75%; Muslims, 1%; remainder animists

Literacy rate : 63% (1995)

Type of Government : Republic

National name : Republique Gabonaise

Member of French Community

Economic summary : Gross national product (1996): \$4.4 billion. Average annual growth (1995-96): 1.2%. Per capita income: \$3,950. Arable land: 1%; Principal agricultural products: sugarcane, peanuts, wood, cocoa, coffee, palm oil, rice, bananas. Labour force: 535,000; in industry: 30%; Major industrial products: petroleum, natural gas, processed wood, manganese, uranium. Natural resources: wood, petroleum, iron ore, manganese, uranium. Exports: crude petroleum, wood and wood products, manganese, uranium. Imports: mining and road-building machinery, electrical equipment, foodstuffs, textiles, transport vehicles, illicit drugs. Major trading partners: France, U.S., Germany, Japan, U.K., African countries.

GAMBIA

Republic of the Gambia

Location : West Africa. With a coastal strip on the Atlantic Ocean, Gambia runs east on each side of the Gambia river. It is surrounded on all land boundaries by Senegal.

Area : 11,295 sq km

Population (est. 1998) : 11,54,000 (average annual growth rate : est. 1995-2000, 3.5% (est. 1997))

Capital : Banjul

Largest cities : Serrekunda, Bakama Bakau, Farafenni

Principal river : Gambia

Highest point : An unmanned point on the Senegalese border, 43 m (141 ft)

Flag : Three wide horizontal stripes of red, blue and green, with narrower stripes of white between them.

Monetary unit : Dalasi

Languages : Native tongues, English (official)

Religion : Islam, 90%; Christian, 1%

Literacy rate : 33% (1995)

Type of Government : Republic

Member of Commonwealth of Nations

Economic summary : Gross national product (1994): \$358 million. Average annual growth (1993-94): 2.9%. Per capita income (1994): \$332. Arable land: 16%; Principal agricultural products: peanuts, rice, palm kernels. Labour force: 400,000; In Industry: 18.9%. Major Industrial products: processed peanuts. Natural resources: fish. Exports: peanuts and peanut products, fish. Imports: textiles, foodstuffs, tobacco, machinery, petroleum products. Major trading partners: U.S., EC, Asia.

GEORGIA

Republic of Georgia

Location : Georgia is a land of snow-capped mountains, turbulent rivers, dense forests and fertile valleys. It is bounded west by Black Sea and south by Turkey, Armenia and Azerbaijan. It occupies the whole western part of Transcaucasia.

Area : 69,700 sq km

Population (est. 1998) : 5.4 million (average annual rate of natural increase : est. 1995-2000, -0.1%)

Capital : Tbilisi

Largest cities : Tbilisi, Kutaisi, Batumi, Sukhumi

Principal rivers : Kura, Rioni

Highest point : Elbrus (on the Russian border, 5,642 m (18,510 ft))

Flag : Dark red, with a canton divided black over white

Monetary unit : Lari

Languages : Georgian (official) 71%, Russian, 9%, Armenian, 7%, Azerbaijani, 6%.

Religion : Georgian Orthodox, 65%; Russian Orthodox, 10%; Armenian Orthodox, 8%; Muslim, 11%

Literacy : 100%

Type of Government : Presidential Republic with Federal elements.

National name : Sakartvelos Respublika

Economic summary : Gross national product (1996): \$4.6 billion. Average annual growth (1993-94): 4.5%. Per capita income: \$850. Labour force (1990): 2,763,000. In industry and construction, 31%; in agriculture and forestry, 25%. Major Industrial products: raw steel, rolled steel, cement, lumber, machine tools, electronic locomotives. Agricultural products: citrus fruits, grapes, sugar, vegetables, grains, cattle, sheep, goats, pigs and poultry. Exports: citrus fruits, tea and other agricultural products. Imports: machinery and parts, fuel, transport equipment, textiles. Major trading partners: Russia, Turkey, Armenia, Azerbaijan, Ukraine.

GERMANY

Federal Republic of Germany

The two nations—the Federal Republic of Germany (West Germany) and the German Democratic Republic (East Germany) were united on October 3, 1990 ending more than 45 years of divided existence. There is no more East or West Germany—once again it is just the 'Deutschland'. Germany, prior to World War I, was a central European nation composed of numerous states which had a common language and traditions and which had been united in one country since 1871; since World War II it was split in two parts.

The two nations agreed to monetary unification under the West German Deutsche Mark beginning in July 1990. With a combined population of 78 million (est. 1990) and Bonn as its capital, Germany is Europe's most powerful economy, accounting for almost a third of the European Community's total output.

Location : Located in Northern Central Europe, Germany has coastlines on the North and Baltic Seas. Belgium, Luxembourg and Netherlands are to its west, Denmark to the north, Czechoslovakia to the east, Austria to the south-east, Switzerland to the south and France to the south-west.

Area : 356,974 sq km

Population (est. 1998) : 82.4 million (average annual growth rate : est. 1995-2000, 0.3%)

Capital : Berlin, seat of Parliament and Government: Bonn

Largest cities : Hamburg, Munich, Cologne, Essen, Frankfurt, Dortmund, Düsseldorf, Stuttgart, Bremen, Hannover, Dresden, Leipzig

Principal rivers : Rhine (Rhein), Elbe, Danube (Danou), Oder, Moselle (Mosel), Neckar, Havel, Leine, Weser

Highest point : Zugspitze, 2,963 m (9,721 ft)

Flag : Three horizontal stripes of black, red and gold

Monetary unit : Deutsche Mark

Language : German

Religion : Protestant, 49%; Roman Catholic, 45%

Literacy rate : 99%

Type of Government : Federal Republic

National name : Bundesrepublik Deutschland

Economic summary - United Germany: Gross national product (1996): \$2,364.6 billion. Average annual growth (1995-96): 1.3%. Per capita income: \$28,870. Principal products: grains, potatoes, sugar beets; major products: iron, steel, coal, cement, chemicals, machinery, ships, vehicles. Natural resources: timber, coal. Exports: machines

Member of Commonwealth of Nations

Economic summary: Gross national product (1994): \$358 million. Average annual growth (1993-94): 2.9%. Per capita income (1994): \$332. **Ambia land:** 16%; **Principal agricultural products:** peanuts, rice, palm kernels. **Labour force:** 400,000; **In industry:** 18.9%. **Major industrial products:** processed peanuts. **Natural resources:** fish. **Exports:** peanuts and peanut products, fish. **Imports:** textiles, foodstuffs, tobacco, machinery, petroleum products. **Major trading partners:** U.S., EC, Asia.

GEORGIA

Republic of Georgia

Location: Georgia is a land of snow-capped mountains, turbulent rivers, dense forests and fertile valleys. It is bounded west by Black Sea and south by Turkey, Armenia and Azerbaijan. It occupies the whole western part of Transcaucasia.

Area: 69,700 sq km

Population (est. 1998): 5.4 million (average annual rate of natural increase: est. 1995-2000, -0.1%)

Capital: Tbilisi

Largest cities: Tbilisi, Kutaisi, Batumi, Sukhumi

Principal rivers: Kura, Rioni

Highest point: Elbrus (on the Russian border, 5,642 m (18,510 ft))

Flag: Dark red, with a canton divided black over white

Monetary unit: Lari

Languages: Georgian (official) 71%, Russian, 9%, Armenian, 7%, Azerbaijani, 6%.

Religion: Georgian Orthodox, 65%; Russian Orthodox, 10%; Armenian Orthodox, 8%; Muslim, 11%

Literacy: 100%

Type of Government: Presidential Republic with Federal elements.

National name: Sakartvelos Respublika

Economic summary: Gross national product (1996): \$4.6 billion. Average annual growth (1993-94): 4.5%. Per capita income: \$850. **Labour force (1990):** 2,763,000. **In industry and construction:** 31%; **In agriculture and forestry:** 25%. **Major industrial products:** iron steel, rolled steel, cement, lumber, machine tools, electronic locomotives. **Agricultural products:** citrus fruits, grapes, sugar, vegetables, grains, cattle, sheep, goats, pigs and poultry. **Exports:** citrus fruits, tea and other agricultural products. **Imports:** machinery and parts, fuel, transport equipment, textiles. **Major trading partners:** Russia, Turkey, Armenia, Azerbaijan, Ukraine.

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Area: 356,974 sq km

Population (est. 1998): 82.4 million (average annual growth rate: est. 1995-2000, 0.3%)

Capital: Berlin, seat of Parliament and Government; Bonn

Largest cities: Hamburg, Munich, Cologne, Essen, Frankfurt, Dortmund, Düsseldorf, Stuttgart, Bremen, Hannover, Dresden, Leipzig

Principal rivers: Rhine (Rhein), Elbe, Danube (Donau), Oder, Moselle (Mosel), Neckar, Havel, Lahn, Weser

Highest point: Zugspitze, 2,963 m (9,721 ft)

Flag: Three horizontal stripes of black, red and gold

Monetary unit: Deutsche Mark

Language: German

Religion: Protestant, 49%; Roman Catholic, 45%

Literacy rate: 99%

Type of Government: Federal Republic

National name: Bundesrepublik Deutschland

Economic summary—United Germany: Gross national product (1996): \$2,364.6 billion. Average annual growth (1995-96): 1.3%. Per capita income: \$28,870. **Principal products:** grains, potatoes, sugar beets; **major products:** iron, steel, coal, cement, chemicals, machinery, ships, vehicles. **Natural resources:** timber, coal. **Exports:** machines

and machine tools, chemicals, motor vehicles, iron and steel products. **Imports:** manufactured and agricultural products, raw materials, fuels. Major trading partners: Belgium, Luxembourg, Italy, U.S., U.K.

GHANA

Republic of Ghana

Location : West Africa. Ghana has a south-facing coastline on the Atlantic Ocean. Ivory Coast is located to its west, Upper Volta to its north and Togo to its east.

Area : 238,537 sq km

Population (est. 1998) : 18.9 million (average annual growth rate : est. 1995-2000, 2.8%)

Capital : Accra

Largest cities : Accra, Kumasi, Tamale, Timale, Tema, Takoradi

Principal river : Volta

Highest point : Afadjato, 872 (2,860 ft)

Flag : Three horizontal stripes of red, gold and green, with a black star in the centre

Monetary unit : Cedi

Languages : English (official); Native tongues (Brong Ahafo; Twi, Fanti, Ga, Ewe, Dagbani)

Religion : Christian, 62.5%; Islam, 15.7%

Literacy rate : 65% (1995)

Type of Government : Military

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$6.2 billion. Average annual growth (1995-96): 5.0%. Per capita income: \$360. Arable land: 5%; Principal agricultural products: cocoa, coconuts, cassava, yam, rice, rubber. Labour force: 3,700,000; in industry: 18.7%; Major industrial products: mining products, cocoa products, aluminium. Natural resources: gold, diamonds, bauxite, manganese, fish. **Exports:** cocoa beans and products, gold, timber, aluminium, bauxite, manganese ore. **Imports:** Petroleum, textiles and manufactured goods, food, fuels, industrial raw materials, machinery, transport equipment. Major trading partners: U.K., U.S., Germany, France, Japan, South Korea.

GREECE

Hellenic Republic

Location : Located in South-east Europe, the mainland has a long coastline on the Mediterranean Sea with the Ionian Sea to the west and Aegean Sea to the east. There are many islands, including Crete, around the coast, especially to the south. Albania, Yugoslavia and Bulgaria are to the north and Turkey to the east.

Area : 131,957 sq km

Population (est. 1998) : 10.6 million (average annual growth rate : est. 1995-2000, 0.3%)

Capital : Athens

Largest cities : Athens, Salonika, Patras, Haraklion, Volos, Larissa

Principal rivers : Aliakmon, Pinios, Akheloo

Highest point : Mount Olympus, 2,911 m (9,550 ft)

Flag : Nine horizontal stripes of blue and white, with a canton of blue with a white cross.

Monetary unit : Drachma

Language : Greek

Religion : Greek Orthodox, 98; Muslim, 1.3%

Literacy rate : 93.2%

Type of Government : Presidential Parliamentary Republic

National name : Elliniki Dímokratia

Economic summary : Gross national product (1996): \$120.0 billion. Average annual growth (1995-96): 2.4%. Per capita income: \$11,460. Arable land: 23%; Principal agricultural products: grains, vegetables, olives, olive oil, tobacco, cotton, livestock, dairy products. Labour force (1990) : 3,966,900; in services, 45%; in agriculture, 27%; in industry, 28%. Major industrial products: textiles, chemicals, food processing. Natural resources: bauxite, lignite, magnesite, crude oil, marble. **Exports:** fruits, textiles, tobacco. **Imports:** machinery and automotive equipment, petroleum, consumer goods, chemicals, foodstuffs. Major trading partners: Germany, Italy, France, U.S., U.K., Netherlands, Japan.

GRENADA

State of Grenada

Location : Grenada is the most southerly of the Windward Islands located in the Eastern Caribbean Sea. Trinidad is 150 km to the south and St. Vincent 110 km to the north. Some of the Grenadines, islets lying between Grenada and St. Vincent, are included in the territory of Grenada.

Area : 344 sq km

Population (est. mid-1997) : 96,000 (average annual growth rate: 0.66%)

Capital : St. George's

Principal rivers : There are no significant rivers

Highest point : Mount St. Catherine, 840 m (2,760 ft)

Flag : Divided into four triangles of yellow, top and bottom, and green, hoist and fly. In the centre is a red disc bearing a gold star. Along the top and bottom are edged red stripes each bearing three gold stars. On the green triangle near the hoist is a pod of nutmeg.

Monetary unit : Eastern Caribbean dollar
Ethnic groups : Blacks and Indians
Language : English
Religion : Roman Catholic, 64%; Anglican, 21%.

Literacy rate : 98%
Type of Government : Independent State
Member of Commonwealth of Nations
Economic summary : Gross domestic product (1994): \$224 million. Real growth rate (1993-94): 3.2%. Per capita income: \$2,437. Arable land: 15%. Principal agricultural products: spices, cocoa, bananas. Labour force: 36,000; in service: 31%. Exports: nutmeg, cocoa, beans, bananas, mace. Imports: foodstuffs, machinery, building materials. Major trading partners: U.K., Trinidad and Tobago, U.S., Japan, Canada, Germany

GUATEMALA

Republic of Guatemala

Location : Central America. Guatemala has Caribbean Sea to the east and Pacific Ocean to the west. Mexico is located to its north, Belize to its east and Honduras and El Salvador to the south-east.

Area : 108,889 sq km
Population (est. 1998) : 11.6 million (average annual growth rate : est. 1995-2000, 2.8%)
Capital : Guatemala City
Largest cities : Quezaltenango, Escuintla, Mazatenango, Puerto Barrios
Principal rivers : Usumacinta, Montagua
Highest point : Tajumulco, 4,220 m (13,861 ft)

Flag : Three vertical stripes of blue, white and blue, with the national arms in the centre.

Monetary unit : Quetzal
Languages : Spanish, Indian languages
Religion : Roman Catholic, Protestant, Mayan
Literacy rate : 56% (1995)
Type of Government : Republic
National name : Republica de Guatemala

Economic summary : Gross national product (1996): \$16.0 billion. Average annual growth (1995-96): 11.7%. Per capita income: \$1,470. Arable land: 12%. Principal agricultural products: corn, beans, coffee, cotton, cattle, sugar, bananas, essential oils, timber. Labour force: 2,500,000; in manufacturing: 14%. Principal industrial products: sugar, textiles, construction materials, tyres, chemicals, petroleum, pharmaceuticals. Natural resources: nickel, timber, crude oil, shrimp. Exports: coffee, cotton, sugar, bananas. Imports: fuels and lubricants, industrial machinery, transportation equipment, chemicals. Major trading

partners: U.S., Central American nations, Caribbean, Mexico, Germany.

GUINEA

Republic of Guinea

Location : West Africa. Guinea has a coastline on the Atlantic Ocean. Guinea-Bissau, Senegal and Mali are located to its north, Ivory Coast to its east, and Sierra Leone and Liberia to its south.

Area : 245,857 sq km
Population (est. 1998) : 7.7 million (average annual growth rate : est. 1995-2000, 1.4%)

Capital : Conakry
Largest cities : Kankan, Kindia
Principal rivers : Niger, Baling, Konkoure, Kogon

Highest point : Mount Nimba, 1,752 m (5,748 ft)

Flag : Three vertical stripes of red, gold and green

Monetary unit : Guinean franc
Languages : French (official), native tongues (Malinke, Susu, Fulani)
Religion : Islam, 85%; Indigenous, 7%; Christian, 1.5%

Literacy rate : 24% in French, 48% in local languages

Type of Government : Republic
National name : Republique de Guinee
Economic summary : Gross national product (1996): \$3.8 billion. Average annual growth (1995-96): 4.4%. Per capita income: \$560. Arable land: 6%. Principal agricultural products: rice, cassava, millet, corn, coffee, bananas, palm products, pineapples. Labour force in industry: 11%. Major industrial products: bauxite, alumina, light manufactured and processed goods. Natural resources: bauxite, iron ore, diamonds, gold, water power. Exports: bauxite, alumina, pineapples, bananas, coffee. Imports: petroleum, machinery, transport equipment, foodstuffs, textiles. Major trading partners: U.S., France, Germany, Canada, Eastern Europe, Brazil.

GUINEA-BISSAU

Republic of Guinea-Bissau

Location : West Africa. Guinea-Bissau has a coastline on the Atlantic Ocean. Senegal is located to its north and Guinea to its east and south.

Area : 36,125 sq km
Population (est. 1998) : 1,100,000 (average annual growth rate : est. 1995-2000, 2.0%)
Capital : Bissau

Largest cities : Bafata

Principal rivers : Cacheu, Mansoa, Geba, Combel

Highest point : An unmanned point in the Fouta Djallon plateau, 180 m (591 ft)

Flag : Horizontally yellow over green with red vertical stripe in the hoist bearing a black star

Monetary unit : Guinea-Bissau peso

Languages : Portuguese Criolo, African languages

Religion : Traditional, 65%; Islam, 30%; Christian, 5%

Literacy rate : 55% (1995)

Type of Government : Republic

National name : Republica da Guiné-Bissau

Economic summary : Gross national product (1996): \$0.3 billion. Average annual growth (1995-96): 6.1%. Per capita income: \$250. Arable land: 9%. **Principal agricultural products:** palm oil, root crops, rice, coconuts, peanuts. **Major industries:** food processing, beer, soft drinks. **Natural resources:** potential bauxite deposits. **Exports:** peanuts, coconuts, shrimp, fish, wood. **Imports:** foodstuffs, manufactured goods, fuels, transportation equipment, petroleum. **Major trading partners:** Portugal, Spain and other European countries, Senegal, U.S.

GUYANA

Cooperative Republic of Guyana

Location : North-east of South America. Guyana has a coastline on the Atlantic Ocean. Brazil is located to its south, Venezuela to its west and Suriname to its east.

Area : 214,969 sq km

Population (est. 1998) : 856,000 (average annual growth rate : est. 1995-2000, -0.78%)

Capital : Georgetown

Largest cities : Linden

Principal rivers : Essequibo, Courantyne, Mazaruni, Demarara

Highest point : Mt. Roraima, 2,772 m (9,094 ft)

Flag : Green with a yellow triangle based on the hoist, edged in white, charged with a red triangle edged in black

Monetary unit : Guyana dollar

Languages : English (official), Amerindian dialects

Religion : Hindu, 34%; Protestant, 18%; Islam, 9%; Roman Catholic, 18%; Anglican, 16%

Literacy rate : 98% (1995)

Type of Government : Republic within the Commonwealth of Nations

Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$540 million. Real growth rate (1993-94): 15.6%. Per capita income: \$655. Arable land: 3%; **Principal agricultural products:** sugar, rice. **Labour in industry:** 44.5%. **Major industrial products:** bauxite, alumina. **Natural resources:** bauxite, gold, diamonds, hardwood timber, shrimp. **Exports:** sugar, bauxite, alumina, rice, timber. **Imports:** petroleum, food, machinery. **Major trading partners:** U.K., U.S., Canada, Japan, Trinidad and Tobago, Germany.

HAITI

Republic of Haiti

Location : Caribbean Sea. Haiti occupies the western part of the island of Hispaniola, with Dominican Republic to the east, occupying the rest of the island. The islands of Cuba and Jamaica are to the west.

Area : 27,750 sq km

Population (est. 1998) : 7.5 million (average annual growth rate : est. 1995-2000, 1.9%)

Capital and largest city : Port-au-Prince

Principal river : Artibonite

Highest point : Pic La Selle, 268 m (8,793 ft)

Flag : Horizontally blue over red with the national arms on a white panel in the centre

Monetary unit : Gourde

Languages : French, Creole

Religion : Roman Catholic, 90%; Baptist, 10%

Literacy rate : 45% (1995)

Type of Government : Military

National name : Republique d'Haiti

Economic summary : Gross national product (1996): \$2.3 billion. Average annual growth (1995-96): 2.4%. Per capita income: \$310. Arable land: 20%; **Principal agricultural products:** coffee, sugarcane, rice, corn, sorghum. **Labour force:** 2,300,000; in agriculture: 66%. **Major industrial products:** refined sugar, textiles, flour, cement, light assembly products. **Natural resource:** bauxite. **Exports:** coffee, light industrial products, bauxite, sugar, cocoa, sisal. **Imports:** consumer goods, foodstuffs, industrial equipment, petroleum products. **Major trading partners:** U.S., Italy, France, Japan.

HONDURAS

Republic of Honduras

Location : Central America. Honduras has coastline on the Pacific Ocean and the Caribbean Sea. Guatemala is located to its west, El Salvador to its south-west and Nicaragua to its south-east.

Area : 112,088 sq km

Population (est. 1996) : 6.1 million (average annual growth rate : est. 1995-2000, 2.8%)

Capital and largest city : Tegucigalpa

Principal rivers : Patuca, Ulua

Highest point : Cerro las Minas, 2,849 m (9,347 ft)

Flag : Three horizontal stripes of blue, white and blue, with five blue stars in the centre

Monetary unit : Lempira

Languages : Spanish, some Indian dialects.

English in Bay Islands Department

Religion : Roman Catholic, about 97%; Small Protestant minority

Literacy rate : 73% (1995)

Type of Government: Democratic constitutional republic

National name : Republica de Honduras

Economic summary : Gross national product (1996): \$4.0 billion. Average annual growth (1995-96): 2.7%. Per capita income: \$660. Arable land: 14%; Principal agricultural products: bananas, coffee, sea food, citrus, sugarcane, tobacco. Labour force (1991): 1,300,000; In industry: 9%. Major products: Industrial products, textiles and clothing, wood products. Natural resources: timber, gold, silver, lead, zinc, antimony. Exports: bananas, coffee, lumber, meat, petroleum products, tobacco, sugar, shrimp and lobster. Imports: manufactured goods, machinery, transportation equipment, chemicals, petroleum. Major trading partners: U.S., Caribbean countries, Western Europe, Japan, Latin America.

HUNGARY

Hungarian People's Republic

Location : East Europe. Czechoslovakia is to the north, Austria to the west, Yugoslavia to the south-west, Romania to the south-east and republics of former U.S.S.R. to the north-east. Hungary is a landlocked country but has access to the sea via the Danube.

Area : 93,030 sq km

Population (est. 1998) : 9.9 million (average annual growth rate : est. 1995-2000, 0.6%)

Capital : Budapest

Largest cities : Budapest, Miskolc, Debrecen, Szeged, Pecs.

Principal rivers : Danube (Duna), Tisza, Drava

Highest point : Kekes, 1,015 m (3,330 ft)

Flag : Three horizontal stripes of red, white and green

Monetary unit : Forint

Language : Magyar

Religions : Roman Catholic, 67.8%; Calvinist, 20.9%; Lutheran, 4.2%.

Literacy rate : 99%

Type of Government : Republic

National name : Magyar Koztar-sasag

Economic summary : Gross national product (1996): \$44.3 billion. Average annual growth (1995-96): 2.2%. Per capita income: \$4,340. Arable land: 54%; Principal agricultural products: corn, wheat, potatoes, sugar beet, vegetables, wine grapes, fruits. Labour force: 5,400,000 in service, trade and government: 43.2%. Major products: steel, chemicals, pharmaceuticals, textiles, transport equipment. Natural resources: some bauxite and iron. Exports: machinery and tools, industrial and consumer goods, raw materials. Imports: machinery, raw materials. Major trading partners: C.I.S. countries, Eastern Europe.

ICELAND

Republic of Iceland

Location : Located in North Atlantic Ocean, the island of Iceland is just south of the Arctic Circle with Greenland to the west across the Denmark Strait. Faeroes and Scotland are located to the south-east.

Area : 103,000 sq km

Population (est. 1998) : 277,000 (average annual growth rate : est. 1995-2000, 1.2%)

Capital and largest city : Reykjavik

Principal rivers : Thjorsa, Skjalfanda, Fjot

Highest point : Hvannadalshnukur, 2,119 m (6,952 ft)

Flag : Blue with a red white-bordered Scandinavian cross

Monetary unit : M.N. Krona

Language : Icelandic

Religion : Evangelical Lutheran

Literacy rate : 100%

Type of Government : Constitutional Republic

National name : Lydveldid Island

Economic summary : Gross domestic product (1994): \$6.2 billion. Real growth rate (1993-94): 1.9%. Per capita income: \$23,280. Principal agricultural products: livestock, hay, fodder, cheese. Labour force: 134,429; In industry and commerce: 55.4%. Major products: processed aluminium, fish. Natural resources: fish, diatomite, hydroelectric and geo-thermal power. Exports: fish, animal products, aluminium. Imports: petroleum products, machinery, transportation equipment, food, textiles. Major trading partners: European Community (EC) countries, European Free Trade Association (EFTA) countries, U.S., Japan and Denmark.

Area : 1,648,000 sq km
Population (est. 1998) : 73.1 million (average annual growth rate : est. 1995-2000, 2.2%)

Capital : Teheran

Largest cities : Teheran, Isfahan, Mashhad, Tabriz.

Principal rivers : Karun, Safid, Atrak, Karkheh

Highest point : Demavend, 5,604 (18,386 ft)

Flag : Three horizontal stripes of green, white and red; on the borders of the green and red stripes is the legend *Allah Akbar* in white Kufi script repeated 22 times in all; in the centre of the white stripe is the national emblem in red.

Monetary unit : Rial

Languages : Farsi (Persian), Kurdish, Arabic

Religion : Shiite Muslim, 94%; Sunni Muslim 4%

Literacy rate : 72.1%

Type of Government : Islamic Republic

Economic summary : Gross national product (1994): \$75.7 billion. Average annual growth (1993-94): 0.5%. Per capita income: \$1151. Arable land: 8%; Principal agricultural products: wheat, barley, rice, sugar beets, cotton, dates, raisins, sheep, goats. Labour force : 15,400,000; in industry: 21%. Major industrial products: crude and refined oil, textiles, cement, petrochemicals, processed foods, steel and copper fabrication. Natural resources: oil, gas, iron, copper. Exports: petroleum, carpets, fruits, nuts, hides. Imports: machinery, military supplies, foodstuffs, chemicals, pharmaceuticals. Major trading partners: Japan, Germany, Netherlands, U.K., Italy, Spain, Turkey, France.

IRAQ

Republic of Iraq

Location : Located in Middle East, Iraq has a short coastline on the Gulf between Iran and Kuwait. Iran is located to its east, Kuwait and Saudi Arabia to its south, Jordan and Syria to its west and Turkey to its north.

Area : 434,913 sq km

Population (est. 1998) : 21.8 million (average annual growth rate : est. 1995-2000, 2.8%)

Capital : Baghdad

Largest cities : Baghdad, Basra, Mosul.

Principal rivers : Tigris (Dijlah), Euphrates (at Furat)

Highest point : Rawanduz, 3,658 m (12,001 ft)

Flag : Three horizontal stripes of red, white and black, with three green stars on the white stripe.

Monetary unit : Iraqi dinar

Languages : Arabic (official) and Kurdish

Religion : Islam 95%; Christian and others 5%

Literacy rate : 58% (1995)

Type of Government : Republic

National name : Jumhouriyat Al Iraq

Economic summary : Gross national product (1994): \$56.9 billion. Average annual growth (1993-94): -6.3%. Per capita income: \$2,855. Arable land : 12%; Principal agricultural products: livestock, wheat, barley, sugarcane, rice. Labour force: 4,400,000; in services 48%, in agriculture, 30%; in industry, 22%. Major industrial products: petroleum, cement, textiles. Natural resources: oil, natural gas, gypsum, phosphates, sulphur. Exports: foodstuffs, petroleum. Imports: manufactured goods, machinery, chemicals, livestock. Major trading partners: France, Italy, Japan, Germany, Brazil, U.K., U.S., Turkey, C.I.S. Countries.

IRELAND

Location : Located in Northeast Atlantic Ocean, the republic of Ireland comprises the main part of the island of Ireland, which lies off the west coast of Europe, the rest being Northern Ireland, included in the United Kingdom. The island of Great Britain (rest of United Kingdom) is to the east.

Area : 70,282 sq km

Population (est. 1998) : 3,600,000 (average annual growth rate : est. 1995-2000, 0.2%)

Capital : Dublin

Largest cities : Dublin, Cork, Limerick.

Principal rivers : Shannon, Suir, Boyne, Barrow, Erne

Highest point : Carraunluo hill, 1,041 m (3,414 ft)

Flag : Three vertical stripes of green, white and orange

Monetary unit : Irish pound (punt)

Languages : Irish, English

Religion : Roman Catholic, 92%; others, 8%

Literacy rate : 98%

Type of Government : Parliamentary Republic

National name : Ireland or Eire in the Irish language

Economic summary : Gross national product (1996): \$62.0 billion. Average annual growth (1995-96): 9.9%. Per capita income: \$17,110. Arable land: 14%. Principal agricultural products: cattle and dairy products, pigs, poultry and eggs, sheep and wool, horses, barley, sugar beets. Labour force: 1,350,000; in industry: 28.6%; Major industrial products: processed foods, beverages, metals and engineering, electronics, tobacco, chemicals. Natural resources: zinc, lead, natural gas, crude oil, barite, copper, gypsum, limestone, dolomite, peat, silver. Exports: livestock, meat, dairy products, machinery, chemicals, processed

foods, manufactured goods, raw materials and minerals. Imports: grains, petroleum products, machinery, phosphates, cereals, chemicals, textile yarn. Major trading partners: U.K., Western European countries, U.S.

ISRAEL

State of Israel

Location : Located in Middle East, Israel has a coastline to the west on the Mediterranean Sea and an outlet to the Red Sea via Elat. Lebanon is to the north, Syria to the north-east, Jordan to the east and Egypt to the west.

Area : 20,772 sq km

Population (est. 1998) : 5.9 million (average annual growth rate : est. 1995-2000, 1.9%)

Capital : Jerusalem

Largest cities : Jerusalem, Tel Aviv, Haifa.

Principal rivers : Jordan (Yarden), Qishon

Highest point : Har Meron (Mt. Atzmon), 1,208 m (3,963 ft)

Flag : White with two horizontal blue stripes, the blue Shield of David in the centre

Monetary unit : Shekel

Languages : Hebrew, Arabic, English

Religion : Judaism, 82%; Islam, 14%; Christian, 2%; others, 2%

Literacy rate : 95%

Type of Government : Republic

National name : Medinat Yisra'el

Economic summary : Gross national product (1996): \$90.3 billion. Average annual growth (1993-94): 13.1%. Per capita Income: \$15,870. Arable land: 17%; Principal agricultural products: citrus and other fruits, vegetables, beef, dairy and poultry products. Labour force (1994): 2.02 m.; In Industry: 29.3%; major industrial products: processed foods, cut diamonds, clothing and textiles, chemicals, metal products, transport and electrical equipment, plastics. Natural resources: sulphur, copper, rock salt, phosphates, potash, bromine. Exports: polished diamonds, citrus and other fruits, clothing and textiles, processed foods, high technology products, computerised medical equipment, military hardware, fertiliser and chemical products. Imports: rough diamonds, chemicals, machinery, iron and steel, cereals, textiles, vehicles, ships aircraft. Major trading partners: U.S., E.C., Switzerland, Japan, Hong Kong, Canada, South Africa.

ITALY

Italian Republic

Location : Southern Europe. The Italian peninsula projects into the Mediterranean Sea with the Adriatic Sea to the east, Ionian Sea to

the south-east and Tyrrhenian Sea to the south-west. In the northern part, France is to the west. Switzerland and Austria to the north, Yugoslavia to the east. The territory includes a number of islands the main ones being Sicily and Sardinia.

Area : 301,278 sq km

Population (est. 1998) : 57.2 million (average annual growth rate : est. 1995-2000, 0%)

Capital : Rome

Largest cities : Rome, Milan, Naples, Turin, Genoa, Palermo, Bologna, Florence, Catania, Bari.

Principal rivers : Po, Tiber (Tevere), Arno, Volturno, Garigliano

Highest point : A point just below the summit of Monte Bianco (Mont Blanc), 4,760 m (15,616 ft)

Flag : Three vertical stripes of green, white and red

Monetary unit : Lira

Language : Italian

Religion : Roman Catholic, almost 100%

Literacy rate : 97%

Type of Government : Republic

National name : Repubblica Italiana

Economic summary : Gross national product (1996): \$1,140.5 billion. Average annual growth (1995-96): 1.0%. Per capita Income: \$19,880. Arable land: 32%; principal agricultural products: wheat, rice, corn, vegetables, grapes, olives, citrus fruits. Labour force: in service 58.7%. Major industrial products: automobiles, machinery, chemicals, textiles, shoes. Natural resources: mercury, potash, fish, gas, marble. Exports: metals, engineering, textiles, foodstuffs, transport equipment, chemicals, footwear. Imports: chemicals, petroleum, industrial machinery, foodstuffs, ferrous and non-ferrous metals, wool, cotton. Major trading partners: E.C., OPEC, U.S.

JAMAICA

Location : Located in the Caribbean Sea, the island of Jamaica has Cuba about 150 km to the north and Haiti about 160 km to the east.

Area : 11,424 sq km

Population (est. 1998) : 2.5 million (average annual growth rate : est. 1995-2000, 0.9%)

Capital and largest city : Kingston

Principal river : Black River

Highest point : Blue Mountain Peak, 2,256 m (7,402 ft)

Flag : A yellow diagonal cross dividing triangles of green, top and bottom, and black, hoist and fly.

Monetary unit : Jamaican dollar

Language : English, Jamaican, C.

Religion : Protestant, 55.9%; Roman Catholic 5%; Others 39.1%

Literacy rate : 85% (1995)

Type of Government : Parliamentary democracy
Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$4.1 billion. Average annual growth (1995-96): -1.0%. Per capita income: \$1,600. Arable land: 19%. Principal agricultural products: sugarcane, citrus fruits, bananas, spices, coconuts, coffee, cocoa. Labour force : 1,083,000; in service 41%; in agriculture 22.5%, in industry, 19%. Major industrial products: bauxite, textiles, processed foods, light manufactures. Natural resources: bauxite, gypsum. Exports: alumina, bauxite, clothing, sugar, citrus fruits, rum, cocoa. Imports: fuels, machinery, transport and electrical equipment, food, fertiliser. Major trading partners: U.S., U.K., Canada, Venezuela, Norway, Trinidad and Tobago, Japan.

JAPAN

Nippon

Location : North-east Asia. Japan is a chain of islands which lies off the north-east coast of Asia. The Sea of Japan separates the islands from the C.I.S., China and South and North Korea. The Pacific Ocean is to the east. The main island is Honshu, with Hokkaido Island to the north, Shikoku and Kyushu islands to the south. Sakhalin island (C.I.S.) is to the north of Hokkaido.

Area : 377,812 sq km

Population (est. 1998) : 125.9 million (average annual growth rate : est. 1995-2000, 0.2%)

Capital : Tokyo

Largest cities : Tokyo, Yokohama, Osaka, Nagoya, Sapporo, Kyoto, Kobe, Fukuoka, Hiroshima, Kitakyusho.

Principal rivers : Tone, Ishikari, Shinano, Kitakami

Highest point : Fujiyama (Mount Fuji), 3,776 m (12,388 ft)

Flag : White with a red disc

Monetary unit : Yen

Language : Japanese

Religion : Shintoist, Buddhist, Christian, others.

Literacy rate : 99%

Type of Government : Parliamentary democracy

National name : Nippon

Economic summary : Gross national product (1996): \$5,149.2 billion. Average annual growth (1995-96): 3.9%. Per capita income: \$40,940. Arable land: 13%; Principal agricultural products: rice, vegetables, fruits, sugar. Labour force :

64,500,000; in trade and services, 54%. Major industrial products: machinery and equipment, metals and metal products, textiles, autos, chemicals, electrical and electronic equipment. Natural resource: fish. Exports: machinery and equipment, automobiles, metals and metal products, textiles, consumer electronics. Imports: fossil fuels, metal ore, raw materials, foodstuffs, machinery and equipment. Major trading partners: U.S., Middle East, Western Europe, South-East Asia.

JORDAN

The Hashemite Kingdom of Jordan

Location : Middle East. Israel is to the west, between Jordan and the Mediterranean Sea, with Syria to the south, Iraq to the east and Saudi Arabia to the south. There is a short coastline with access to the sea at Aqaba.

Area : 97,740 sq km (excludes West Bank)

Population (est. 1998) : 6.0 million (average annual growth rate : est. 1995-2000, 3.3%)

Capital : Amman

Largest cities : Amman, Zarqa, Irbid, Salt.

Principal river : Jordan (Urdun)

Highest point : Jabal Ramm, 1,754 m (5,755 ft)

Flag : Three horizontal stripes of black, white and green, with a red triangle based on the hoist, bearing a white 7-pointed star

Monetary unit : Jordanian dinar

Languages : Arabic (official), English

Religion : Islam, 96%; Christian, 4%

Literacy rate : 87%

Type of Government : Constitutional Monarchy

National name : Al Mamlaka al Urduniya al Hashemiyah

Economic summary : Gross national product (1996): \$7.1 billion. Average annual growth (1995-96): 5.7%. Per capita income: \$1,650. Arable land : 4%. Principal agricultural products: barley, fruits, vegetables, olive oil. Labour force: 859,130 (1993); in manufacturing and mining 20%. Major industrial products: phosphate, refined petroleum products, cement. Natural resources: phosphate, potash. Exports: phosphates, fruits and vegetables, shale oil, fertiliser, livestock. Imports: textiles, capital goods, foodstuffs, motor vehicles, petroleum products. Major trading partners: U.S., Japan, Saudi Arabia, Iraq, E.C., China.

KAZAKHSTAN

Republic of Kazakhstan

Location : Kazakhstan is bounded in the west by the Caspian Sea and Russia, in the north

by Russia, in the east by China and in the south by Uzbekistan and Kyrgyzstan.

Area : 2,717,300 sq km

Population (est. 1998) : 16.9 million (average annual rate of natural increase : est. 1995-2000, 0.1%)

Capital : Akmolá (formerly Tselinograd)

Largest cities : Alma-Ata, Karaganda, Chimkent, Semipalatinsk, Ust-Kamenogorsk, Aktyubinsk, Temirtau, and Petropavlovsk

Principal river : Syrdarya

Highest point : Khan Tengri, 6,398 m (20,991 ft)

Flag : Light blue, in the centre a sun and a soaring eagle, in the hoist a vertical ornamentation, all in yellow

Monetary unit : Tenge

Language : Kazakh (Qazaq) official language, Russian

Religion : Muslims, 47%, Russian Orthodox; Lutheran

Literacy : 98%

Type of Government : Republic

National name : Kazak Respublikasy

Economic summary : Gross national product (1996): \$22.2 billion. Average annual growth (1995-96): 0.9%. Per capita Income: \$1,350. Labour force : 9.4 m; in agriculture, 25%. Major agricultural products : grains, spring wheat, meat, cotton, wool. Major industries : extractive industries (oil, coal, iron ore, manganese, bauxite, gold, silver, phosphates). Exports : oil, ferrous and non-ferrous metals, chemicals, wool, grain wheat. Imports : machinery and parts, industrial materials. Major Trading Partners : Russia, Ukraine, Uzbekistan and other former Soviet Union republics, China.

KENYA

Republic of Kenya

Location : East Central Africa. With a coastline on Indian Ocean, Somalia is located to the north-east of Kenya, Ethiopia and Sudan to its north, Uganda to its west and Tanzania to its south.

Area : 582,646 sq km

Population (est. 1998) : 29.0 million (average annual growth rate : est. 1995-2000, 2.2%)

Capital : Nairobi

Largest cities : Nairobi, Mombasa, Kisumu, Nakuru.

Principal rivers : Tana, Umba, Athi, Mathioya

Highest point : Mount Kenya, 5,199 m (17,058 ft)

Flag : Three horizontal stripes of black, red and green with the red edged in white; bearing in

the centre an African shield in black and white with two crossed spears behind.

Monetary unit : Kenyan shilling

Languages : English, Swahili (national) and several other languages spoken by 40 ethnic groups

Religion : Protestant, 38%; Roman Catholic, 28%; traditional, 26%; Islam, 6%

Literacy rate : 78.1%

Type of Government : Republic

National name : Jamhuriya Kenya

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$8.7 billion. Average annual growth (1995-96): 5.7%. Per capita income: \$320. Arable land: 3%. Principal agricultural products: coffee, sisal, tea, pineapples, cotton, pyrethrum, livestock. Labour force : 9.2 million; in services, 54.8%; in industry, 26.2%, and in agriculture, 19%. Major industrial products: textiles, processed foods, consumer goods, refined oil. Natural resources: wildlife. Exports: coffee, tea, foodstuffs, refined petroleum. Imports: machinery, transport equipment, crude oil, iron and steel products. Major trading partners: Western European countries, Far East, U.S., Africa, Middle East.

KIRIBATI

Republic of Kiribati

Location : Located in South-west Pacific Ocean, Kiribati comprises 33 main islands in three sections: the main Kiribati (Gilbert Island) group of 17 main islands including Banaba or Ocean Island, Phoenix Islands of 8 main islands and Line Islands of 8 main islands including Kiritimati, formerly Christmas Island. The International Date Line divides the Kiribati Islands to the west from the Phoenix and Line Islands to the east.

Area : 726 sq km

Population (est. mid-1997) : 82,449 (average annual growth rate: 1.85%)

Capital : Tarawa

Principal rivers : There are no significant rivers

Highest point : 81 m (265 ft) on Banaba

Flag : Red with blue and white wavy lines in base. In the centre is a gold rising sun and a flying frigate bird.

Monetary unit : Australian dollar

Language : English

Religion : Roman Catholic. 53%; Protestant, 39%

Literacy rate : 90.6%

Type of Government : Republic
Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$46 million. Real growth rate: 15%. Per capita income (1994): \$602. Principal agricultural products: copra, vegetables. **Exports:** fish, copra. **Imports:** foodstuffs, fuel, transportation equipment. **Major trading partners:** New Zealand, Australia, Japan, American Samoa, U.K., U.S., Fiji.

KOREA, NORTH

Democratic People's Republic of Korea

Location : Eastern Asia. North Korea is located in the northern part of the Korean peninsula, with the Sea of Japan to the east and the Yellow Sea to the west. South Korea is to the south roughly below the 38th Parallel and China to the north-west. There is a short border with republics of former Soviet Union to the north-east.

Area : 121,129 sq km

Population (est. 1998) : 23.2 million (average annual growth rate : est. 1995-2000, 1.6%)

Capital : Pyongyang

Largest cities : Hamhung, Chongjin, Chinnampo, Sinulju

Principal rivers : Imjin, Ch'ongh'on, Yalu

Highest point : Paek-tu, 2,744 m (9,003 ft)

Flag : Blue, red and blue horizontal stripes separated by narrow white bands. The red stripe bears a white circle within which is red five-pointed star.

Monetary unit : Won

Language : Korean

Religion : Buddhism and Confucianism, religious activities almost non-existent

Literacy rate : 99% (est)

Type of Government : Communist state

National name : Choson Minjujuui Inmin Konghwaguk

Economic summary : Gross national product (1994): \$27.1 billion. Average annual growth (1993-94): 3.4%. Per capita income (1994): \$1,155. Arable land: 18%. Principal agricultural products: corn, rice, vegetables. Labour force: 10.08 million; non-agriculture: 60%. Major industrial products: machines, electric power, chemicals, textiles, fertilisers, metallurgical products. Natural resources: coal, iron ore, hydroelectric power. **Exports:** minerals, chemical and metallurgical products. **Imports:** machinery and equipment, petroleum, foodstuffs, coking coal. **Major trading partners:** C.I.S. countries, China, Japan, Hong Kong, Germany, Singapore.

KOREA, SOUTH

Republic of Korea

Location : Eastern Asia. South Korea is located in the southern part of the Korean peninsula, with the Sea of Japan to the east and the Yellow Sea to the west. North Korea is to the north, Japan is about 160 km to the south-east across the Sea of Japan.

Area : 99,263 sq km

Population (est. 1998) : 46.1 million (average annual growth rate : est. 1995-2000, 0.9%)

Capital : Seoul

Largest cities : Seoul, Pusan, Taegu, Incheon, Kwangju, Taejon, Ulsan, Sowon

Principal rivers : Han, Kum, Nakdong, Songjin, Yongsan

Highest point : Halla-san, 1,950 m (6,398 ft) on Cheju Island

Flag : White charged in the centre with the *yang-um* in red and blue and with four black *palgwa* trigrams.

Monetary unit : Won

Language : Korean

Religion (1991) : Buddhist, 23.7%; Confucianist, 1.5%; Catholic, 4.8%; Protestant, 16.3%; no religion, 52.9%.

Literacy rate : 98%

Type of Government : Republic with power centralised in a strong executive

National name : Taehan Min'guk

Economic summary : Gross national product (1996): \$483.1 billion. Average annual growth (1995-96): 6.9%. Per capita income: \$10,610. Arable land: 21%. Principal agricultural products: rice, barley. Labour force: (1995) 21.14 m; in mining and manufacturing: 27%. Major products: clothing and textiles, processed foods, chemical fertilisers, chemicals, plywood, steel, electronics equipment. Natural resources: molybdenum, lead, tungsten, graphite, coal, hydro power. **Exports:** textiles, electric and electronics, steel, ships. **Imports :** transport equipment, textiles, oil, grains, chemicals, electronics, machinery. **Major trading partners:** U.S., Japan.

KUWAIT

State of Kuwait

Location : Located in the Middle East, Kuwait has a coastline to the east on the Gulf. Iraq is to its north and west, and Saudi Arabia to the south, the Neutral Zone, partitioned and shared with Saudi Arabia, is to the south.

Area : 17,820 sq km

Population (est. 1998) : 1.8 million (average annual growth rate : est. 1995-2000, 3%)

Capital : Kuwait

Largest city : Hawalli, Al Salimiyah

Principal rivers : There are no permanent rivers

Highest point : 289 m (951 ft) at Ash Shaqaya

Flag : Three horizontal stripes of green, white and red, with a black trapezium based on the hoist

Monetary unit : Kuwaiti dinar

Languages : Arabic and English

Religion : Sunni Muslims, 80%; Shia Muslims, 15%; Christians, 6% and others, 3%.

Literacy rate : 79%

Type of Government : Constitutional Monarchy

National name : Dawlat al Kuwait

Economic summary : Gross national product (1994): \$26.6 billion. Average annual growth (1993-94): 2.8%. Per capita income (1994): \$16,285. Land used for agriculture: 8%. Labour force: 990,518 (1994); In services: 45%; Major products: crude and refined oil, fertiliser, petrochemicals, building materials, salt. Natural resources: petroleum, fish, shrimp. **Exports:** crude and refined petroleum, shrimp. **Imports:** foodstuffs, automobiles, building materials, machinery, textiles. Major trading partners: U.S., Japan, Italy, Germany, U.K., Canada.

KYRGYZSTAN

The Kyrgyz Republic

Location : Situated on the Tien-Shan mountains, the republic is bordered on the east by China, on the west by Kazakhstan and Uzbekistan, on the north by Kazakhstan and on the south by Tajikistan

Area : 198,500 sq km

Population (est. 1998) : 4.5 million (average annual rate of natural increase : est. 1995-2000, 0.4%)

Capital : Bishkek (Frunze)

Principal rivers : Sarydzhas, Naryn, Kyzylsu

Highest point : Pik Pobedy, 7,439 m (24,406 ft)

Largest cities : Bishkek, Osh, Przhevalsk, Kyzyl-Kiya and Tokmak

Flag : A red field in the proportions 3:5 charged with a gold sun of 40 wavy rays, in the centre of which is a yurt crossed by two sets of curved lines

Monetary unit : The Som

Languages : Kirghiz (of Turkic origin); official language : Russian

Religion : Muslims, 70%; Russian Orthodox

Literacy rate : 97%

Type of Government : Republic

National name : Kyrgyz Respublikasy

Economic summary : Gross national product (1996): \$2.5 billion. Average annual growth (1995-96): 5.5%. Per capita income: \$550. Labour

force (1993): Major agricultural products : wheat, cotton, grapes, sugar beets, tobacco, livestock rising. Major industrial products; electrical engineering, hydroelectric power, agricultural machinery, washing machines. Natural resources: earth metals and gold. Major trading partners : Russia, Ukraine, Uzbekistan, Kazaksan.

LAOS

Laos People's Democratic Republic

Location : Laos is a landlocked country in South-east Asia. China is to its north, Vietnam to its east, Cambodia (Kampuchea) to its south, Thailand to the west and Burma to the north-west

Area : 236,800 sq km

Population (est. 1998) : 5.4 million (average annual growth rate : est. 1995-2000, 3.1%)

Capital : Vientiane

Largest cities : Savannakhet, Luang Prabang, Pakse

Principal river : Mekong

Highest point : Phou Bia, 2,820 m (9,252 ft)

Flag : Three horizontal stripes of red, blue and red, with blue of double width. In the centre is a large white disc.

Monetary unit: Kip

Languages: Lao (official); French, English

Religion : Buddhist, 85%; animist and others, 15%

Literacy rate: 57% (1995)

Type of Government : Communist

National name : Salhalanalat Paxathipatal Paxaxon Lao

Economic summary: Gross national product (1996): \$1.9 billion. Average annual growth (1995-96): 6.8%. Per capita income: \$400. Arable land: 4%. Principal products: rice, corn, vegetables. Labour force: 1-1.5 million; 85-90% in agriculture. Major agricultural products : rice, corn, vegetables. Major industrial products: tin, timber, tobacco, textiles, electric power. Natural resources: tin, timber, hydroelectric power. **Exports:** electric power, forest products, tin concentrate, coffee, gypsum, cardomom, clothing and textiles. **Imports:** rice, foodstuffs, petroleum products, machinery, transport equipment. Major trading partners: Thailand, Malaysia, Vietnam, C.I.S. countries, China, Japan, France, U.S., Hong Kong, Singapore.

LATVIA

The Republic of Latvia

Location : Latvia is bounded in the north by Estonia and the Baltic Sea, west by the Baltic, south by Lithuania and Belarus (Belorussia) and east by Russia.

Type of Government : Republic
Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$46 million. Real growth rate: 15%. Per capita income (1994): \$602. Principal agricultural products: copra, vegetables. **Exports:** fish, copra. **Imports:** foodstuffs, fuel, transportation equipment. **Major trading partners:** New Zealand, Australia, Japan, American Samoa, U.K., U.S., Fiji.

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Democratic People's Republic of Korea

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Highest point : Paek-tu, 2,744 m (9,003 ft)

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Monetary unit : Won

Language : Korean

Religion : Buddhism and Confucianism, religious activities almost non-existent

Literacy rate : 99% (est)

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Republic of Korea

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Highest point : Halla-san, 1,950 m (6,398 ft) on Cheju Island

Flag : White charged in the centre with the *yang-um* in red and blue and with four black *pa'algwae* trigrams.

Monetary unit : Won

Language : Korean

Religion (1991) : Buddhist, 23.7%; Confucianist, 1.5%; Catholic, 4.8%; Protestant, 16.3%; no religion, 52.9%.

Literacy rate : 98%

Type of Government : Republic with power centralised in a strong executive

National name : Taehan Min'guk

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KUWAIT

State of Kuwait

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Largest city : Hawalli, Al Salimiyah

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Languages : Arabic and English

Religion : Sunni Muslims, 80%; Shia Muslims,

15%; Christians, 6% and others, 3%.

Literacy rate : 79%

Type of Government : Constitutional Monarchy

National name : Dawlat al Kuwayt

Economic summary : Gross national product

(1994): \$26.6 billion. Average annual growth

(1993-94): 2.8%. Per capita income (1994):

\$16,285. Land used for agriculture: 8%. Labour

force: 990,518 (1994); in services: 45%; Major

products: crude and refined oil, fertiliser, petro-

chemicals, building materials, salt. Natural

resources: petroleum, fish, shrimp. Exports: crude

and refined petroleum, shrimp. Imports: foodstuffs,

automobiles, building materials, machinery,

textiles. Major trading partners: U.S., Japan,

Italy, Germany, U.K., Canada.

KRUGYZSTAN

The Kyrgyz Republic

Location : Situated on the Tien-Shan mountains,

the republic is bordered on the east by China, on

the west by Kazakhstan and Uzbekistan, on the

north by Kazakhstan and on the south by

Tajikistan

Area : 198,500 sq km

Population (est. 1998) : 4.5 million (average

annual rate of natural increase : est. 1995-2000,

0.4%)

Capital : Bishkek (Frunze)

Principal rivers : Sarydzhas, Naryn, Kyzylsu

Highest point : Pik Pobedy, 7,439 m (24,406 ft)

Largest cities : Bishkek, Osh, Przhevalsk,

Kyzyl-Kiya and Tokmak

Flag : A red field in the proportions 3:5 charged

with a gold sun of 40 wavy rays, in the centre

of which is a yurt crossed by two sets of curved

lines

Monetary unit : The Som

Languages : Kirghiz (of Turkic origin); official

language : Russian

Religion : Muslims, 70%; Russian Orthodox

Literacy rate : 97%

Type of Government : Republic

National name : Kyrgyz Respublikasy

Economic summary : Gross national product

(1996): \$2.5 billion. Average annual growth

(1995-96): 5.5%. Per capita income: \$550. Labour

force (1993): Major agricultural products : wheat, cotton, grapes, sugar beets, tobacco, livestock rising. Major industrial products: electrical engineering, hydroelectric power, agricultural machinery, washing machines. Natural resources: earth metals and gold. Major trading partners : Russia, Ukraine, Uzbekistan, Kazakhstan.

LAOS

Lao People's Democratic Republic

Location : Laos is a landlocked country in

South-east Asia. China is to its north, Vietnam to

its east, Cambodia (Kampuchea) to its south,

Thailand to the west and Burma to the north-west.

Area : 236,800 sq km

Population (est. 1998) : 5.4 million (average

annual growth rate : est. 1995-2000, 3.1%)

Capital : Vientiane

Largest cities : Savannakhet, Luang Prabang,

Pakse

Principal river : Mekong

Highest point : Phou Bia, 2,820 m (9,252 ft)

Flag : Three horizontal stripes of red, blue and

red, with blue of double width. In the centre is

a large white disc.

Monetary unit: Kip

Languages: Lao (official); French, English

Religion : Buddhist, 85%; animist and others,

15%

Literacy rate: 57% (1995)

Type of Government : Communist

National name : Sathalanalat Paxathipatal

Paxaxon Lao

Economic summary: Gross national product

(1996): \$1.9 billion. Average annual growth

(1995-96): 6.8%. Per capita income: \$400. Arable

land: 4%. Principal products: rice, corn,

vegetables. Labour force: 1-1.5 million; 85-90%

in agriculture. Major agricultural products : rice,

corn, vegetables. Major industrial products: tin,

timber, tobacco, textiles, electric power. Natural

resources: tin, timber, hydroelectric power. Exports:

electric power, forest products, tin concentrate,

coffee, gypsum, cordons, clothing and textiles.

Imports: rice, foodstuffs, petroleum products,

machinery, transport equipment. Major trading

partners: Thailand, Malaysia, Vietnam, C.I.S.

countries, China, Japan, France, U.S., Hong Kong,

Singapore.

LATVIA

The Republic of Latvia

Location : Latvia is bounded in the north by

Estonia and the Baltic Sea, west by the Baltic,

south by Lithuania and Belarus (Belorussia) and

east by Russia.

Area : 64,600 sq km
Population (est. 1998) : 2.4 million (average annual rate of natural increase : est. 1995-2000, 1.1%)

Capital : Riga
Largest cities : Daugavpils, Liepaja, Jelgava, Jūrmala, and Ventspils.

Principal river : Daugava
Highest point : Osveyskoye, 311 m (1,020 ft)
Flag : Dark red, with a narrow horizontal white stripe across the centre

Monetary unit : Lats
Language : Latvian
Religion : Lutheran, Catholic and Baptist
Literacy rate : 100%

Type of Government : Republic
National name : Latvijas Republika
Economic summary : Gross national product (1996): \$5.7 billion. Average annual growth (1995-96): 2.4%. Per capita income: \$2,300. Labour force (1992): in industry, 33.2%; in agriculture, 23%. Natural resources: Peat, Saproel, timber, limestone, dolomite and clay. Major industries: Machinery and metal working, electrical equipment, agricultural engineering, light industry, timber and paper, building materials and chemicals, and pharmaceuticals. There are peat deposits, gypsum deposits and amber which is frequently found in the coastal districts. The area under cultivation (in 1990) is 3.9 million hectares. Cattle and dairy farming are the chief agricultural occupations. Imports : Petroleum products, chemicals, machinery. Major trading partners : Russia Ukraine, other former Soviet republics, Poland, Germany, Sweden, Czech republic

LEBANON

Republic of Lebanon

Location: Middle East. Lebanon has a coastline on the Mediterranean Sea. Syria is located to its north and east and Israel to its south.

Area : 10,400 sq km
Population: (est. 1998) : 3.2 million (average annual growth rate : est. 1995-2000, 1.8%)

Capital : Beirut
Largest cities : Tripoli, Sidon, Tyre, Zahleh.
Principal river : Nahr al-Litani
Highest point : Qumal as-Sawda, 3,088 m (10,131 ft)

Flag : Three horizontal stripes of red, white and red, with the white of double width and bearing in the centre a green cedar of Lebanon.

Monetary unit : Lebanese pound
Languages : Arabic (official), French, English
Religion : Islam, 55.3; Christian, 37.6%; Druze, 7.1%

Literacy rate: 92%

Type of Government : Republic

National name : Al-Jumhouriya al-Lubnaniya

Economic summary : Gross national product (1996): \$12.1 billion. Average annual growth (1995-96): 2.4%. Per capita income: \$2,970. Arable land: 21%. Principal products: fruits, wheat, corn, barley, potatoes, tobacco, olives, onions. Labour force (1985): 650,000; in industry: 79%; Major products: processed foods, textiles, cement, chemicals, refined oil; tourism. Exports: fruits, vegetables, textiles, chemicals, refined oil. Imports: metals, machinery, foodstuffs, transport equipment. Major trading partners: U.S., Western European and Arab countries.

LESOTHO

Kingdom of Lesotho

Location : South Africa. Lesotho is a landlocked country and is completely surrounded by South Africa, with Cape Province and Natal between Lesotho and the Indian Ocean, and Orange Free State island to its northwest.

Area : 30,355 sq km
Population (est. 1998) : 2.2 million (average annual growth rate : est 1995-2000, 2.5%)

Capital and largest city : Maseru
Principal rivers : Orange, Caledon
Highest point : Thabana Ntlenyana, 3,482 m (11,425 ft)

Flag : Diagonally white over blue over green with the white of double width charged with a brown Basotho shield in the upper hoist.

Monetary unit : Loti
Languages : English and Sesotho (official); also Zulu and Xhosa

Religion : Christian, 93%; indigenous belief; Muslims; and Bahai

Literacy rate : 71% (1995)
Type of Government : Military regime and constitutional monarchy

Member of Commonwealth of Nations
Economic summary : Gross national product (1996): \$1.3 billion. Average annual growth (1995-96): 9.0%. Per capita income: \$660. Arable land: 10%. Principal products: corn, wheat, sorghum, barley, livestock. Labour force: 826,000; in subsistence agriculture: 86.2%. Natural resources: diamonds. Exports: wool, mohair, wheat, cattle, diamonds, hides and skins. Imports: foodstuffs, building materials, clothing, vehicles, machinery. Major trading partner: South Africa, EC, North and South America.

LIBERIA

Republic of Liberia

Location : West Africa. Liberia has a coastline on the Atlantic Ocean at the western end of the Gulf of Guinea. Sierra Leone is located to its north-west, Guinea to its north and Ivory Coast to its east.

Area : 99,067 sq km

Population (est. 1998) : 2.7 million (average annual growth rate : est. 1995-2000, 3.3%)

Capital : Monrovia

Largest cities : Monrovia, Buchanan

Principal rivers : St. Paul, St. John, Cess

Highest point : Mount Nimba, 1,380 m (4,540 ft)

Flag : Six red and five white horizontal stripes alternating. In the upper corner, nearest the staff, is a square of blue covering a depth of five stripes. In the centre of this blue field is five-pointed white star.

Monetary unit : Liberian dollar

Languages : English (official) and tribal dialects

Religion : Traditional, 70%; Christian, 10%; Islam, 20%

Literacy rate : 38% (1995)

Type of Government : Civilian republic

Economic summary : Gross domestic product (1994): \$2.1 billion. Real growth rate (1993-94): -12.5%. Per capita income: \$718. Arable land: 1%. **Principal products :** rubber, rice, palm oil, cassava, coffee, cocoa. **Labour force :** 510,000; in agriculture: 70.5%; in industry: 4.5%; **Major products :** Iron ore, diamonds, processed rubber, processed food, construction materials. **Natural resources :** iron ore, rubber, timber, diamonds. **Exports :** Iron ore, rubber, timber, diamonds. **Imports :** machinery, petroleum products, transport equipment, foodstuffs. **Major trading partners :** U.S., E.C., Netherlands, Belgium, Japan, China.

LIBYA

Great Socialist People's Libyan Arab Republic

Location : North Africa. Mainly desert inland. Libya has a long coastline on the Mediterranean Sea. Egypt and Sudan are located to its east, Chad and Niger to its south, and Algeria and Tunisia to west.

Area : 1,759,998 sq km

Population (est. 1998) : 6.0 million (average annual growth rate : est. 1995-2000, 3.3%)

Capital : Tripoli

Largest cities : Tripoli, Benghazi, Misurata, Sirte, Al-Jofrah

Principal river : Wadi al-Farigh

Highest point : Pico Bette, 2,286 m (7,500 ft)

Flag : Plain green

Monetary unit : Libyan dinar

Language : Arabic, Italian and English widely understood in major cities

Religion : Islam

Literacy rate : 76% (1995)

Type of Government : Islamic Arab Socialist "Mass-State"

National name : Socialist People's Libyan Arab Jamahiriya

Economic summary : Gross national product (1994): \$22.1 billion. Average annual growth (1993-94): -2.4%. Per capita income: \$4,220. Arable land: 1%. **Principal products :** wheat, barley, olives, dates, citrus fruits, peanuts. **Labour force :** 1,000,000; in industry: 31%. **Major industrial products :** petroleum, processed foods, textiles, handicrafts. **Natural resources :** petroleum, natural gas. **Exports :** petroleum. **Imports :** machinery, foodstuffs, manufactured goods. **Major trading partners :** Italy, Germany, U.K., France, Spain, Japan, Turkey, Korea.

LIECHTENSTEIN

Principality of Liechtenstein

Location : Central Europe. Liechtenstein is a landlocked country and is located on the Upper Rhine, between Austria (Vorarlberg province) to the east and Switzerland to the west and south.

Area : 157 sq km

Population (est. mid-1997) : 31,389 (average annual growth rate: 1.02%)

Capital : Vaduz

Largest cities : Vaduz, Scharnau

Principal rivers : Rhine (Rhein), Samina

Highest point : Grauspitze, 2,599 m (8,326 ft)

Flag : Horizontally blue over red, with a gold coronet in the first quarter

Monetary unit : Swiss franc

Language : German

Religion : Roman Catholic, 87.3%; Protestant, 8.3%, others, 4.4%

Literacy rate : 100%

Type of Government : Hereditary Constitutional Monarchy

Economic summary : Gross national product (1994): \$49.3 billion. Per capita income: \$1481. Arable land: 25%; **Labour force in agriculture :** 4%. **Principal products :** livestock, vegetables, corn, wheat, potatoes, grapes. **Labour force :** 19,905 (12,041 are foreigners); in industry, 53%; in service, 45%; **Major industrial products :** electronics, metal products, textiles, ceramics, pharmaceuticals.

industrial goods. Natural resources: timber, hydroelectric power. Exports: small speciality machinery, dental products, hardware, chemical products. Imports: raw materials, machinery, processed foods and metal goods. Major trading partners: Switzerland and other Western European countries.

LITHUANIA

Republic of Lithuania

Location: The republic is bounded in the north by Latvia, east and south by Belorussia, and west by Poland, the Kaliningrad area of Russia and the Baltic Sea.

Area: 65,200 sq km

Population (est. 1998): 3,700,000 (average annual rate of natural increase: -0.3%)

Capital: Vilnius

Largest cities: Vilnius, Kaunas, Klaipėda, Šiauliai

Principal rivers: Nemunas (Neman), Vihnya

Highest point: Juozapine, 294 m (964 ft)

Flag: Three horizontal stripes of yellow, green and red

Monetary unit: Litas

Language: Lithuanian

Religion: Catholic, 90%

Literacy rate: 100%

Type of Government: Republic

National name: Lietuva

Economic summary: Gross national product (1996): \$8.5 billion. Average annual growth (1995-96): 2.6%. Per capita income: \$2,280. Labour force (1993): 1,778,200. Employment: industry and construction, 40%; agriculture and forestry, 36%. Mainly agricultural country before 1940, it has since been considerably industrialised. Farming is focussed on milk and meat production. There are heavy engineering, ship-building and building material industries. The industrial output includes steel, timber, cement, paper, fabrics, footwear, hosiery, footwear, granulated sugar, butter, etc. Exports: Lithuania is a net exporter of meat, milk and eggs. Other products are electronics, petroleum products, food, chemicals. Imports: oil machinery, chemicals, grains. Major trading partners: About 75% of trade is with C.I.S. nations.

LUXEMBOURG

Grand Duchy of Luxembourg

Location: Luxembourg is located in Western Europe. Belgium is to its north and west, France to its south and West Germany to its east. It is a landlocked country but has access to the sea via the Moselle and Rhine.

Area: 2,586 sq km

Population (est. 1998): 422,000 (average annual growth rate: est. 1995-2000, 1.4%)

Capital: Luxembourg

Largest cities: Esch-sur-Alzette, Differdange, Dudelange, Petange, Sanem

Principal rivers: Moselle, Sure, Our, Alzette

Highest point: Huldange, 550 m (1,833 ft)

Flag: Three horizontal stripes of red, white and light blue.

Monetary unit: Luxembourg franc

Languages: Luxembourgish, French, German

Religion: Mainly Roman Catholic

Literacy rate: 100%

Type of Government: Constitutional Monarchy

National name: Grand Duché de Luxembourg

Economic summary: Gross national product (1994): \$11.1 billion. Real growth rate (1993-94): 9.7%. Per capita income: \$27,611. Arable land: 24%. Principal products: livestock, dairy products, wine. Labour force: 201,100; one-third are foreign workers; in service, 65%; in industry, 31.6%; in agriculture, 3.4%. Major products: steel, plastics, rubber, synthetic fibres. Natural resource: Iron ore. Exports: steel, chemicals, rubber products, glass, aluminium, plastics. Imports: minerals, metals, foodstuff, consumer goods. Major trading partners: European Common Market countries.

MACEDONIA

Republic of Macedonia

Location: A landlocked country, bounded in the north by Yugoslavia, in the east by Bulgaria, in the south by Greece and in the west by Albania.

Area: 25,713 sq km

Population (est. 1998): 2.2 million (average annual rate of natural increase: est. 1995-2000, 0.7%)

Capital: Skopje

Largest cities: Skopje, Bitola, Kumanovo, Prelep, Tetovo, Titov Veles, Ohrid, Štip,

Principal rivers: Vardar, Strumica

Highest point: Korab, 2,753 m (9,032 ft)

Flag: A red field with a gold sun composed of a disc and 16 rays in the centre

Monetary unit: Denar

Languages: Macedonian, 70%; Albanian, 21%; Turkish 3%; other 6%

Religion: Eastern Orthodox, 67%; Muslim 30%; other Christian

Literacy rate: Very high

Type of Government: Republic

National name: Republika Makedonija

Economic summary: Gross national product (1996): \$2.0 billion. Average annual growth

(1995-96): 1.3%. Per capita income: \$990. Agriculture is the mainstay of the economy. Major agricultural products : rice, tobacco, wheat, corn, millet, cotton, citrus fruits, vegetables. Major industrial products: low steel technology, textiles, wood products, tobacco. Major trading partners : Germany, Albania, Bulgaria, former Yugoslav republics.

MADAGASCAR

Democratic Republic of Madagascar

Location : Madagascar is located in the Western Indian Ocean. The island is located off the east African coast of Mozambique and is separated from Africa by the Mozambique channel.

Area : 587,050 sq km

Population (est. 1998) : 16.3 million (average annual growth rate : est. 1995-2000, 3.1%)

Capital : Antananarivo

Largest cities : Toamasina, Fianarantsoa, Mahajanga

Principal rivers : Ikopa, Mania, Mangoky

Highest point : Maromokotro Tsaratanana Massif, 2,885 m (9,465 ft)

Flag : Horizontally red over green. In the hoist is a vertical white stripe.

Monetary unit : Malagasy Franc

Languages : Malagasy, French

Ethnic groups : Merina (or Hova), Betsimisaraka, Betsileo, Tsimihety, Antaisaka, Sakalava, Antandroy

Religions : Traditional, 47%; Christian, 48%; Islam 1.7%

Literacy rate : 80.2%

Type of Government : Republic, strong presidential authority

National name : Repoblikan Demokratika Malagasy

Economic summary : Gross national product (1996): \$3.4 billion. Average annual growth (1995-96): 3.5%. Per capita income: \$250. Arable land: 4%; Principal agricultural products: rice, livestock, coffee, vanilla, sugar, cloves, cotton, sisal, peanuts, tobacco. Labour force: 4,900,000; In subsistence agriculture: 80-85%. Major industrial products: processed food, textiles, assembled automobiles, soap, mining products. Natural resources: graphite, chromium, coal, bauxite, ilmenite, semi-precious stones. **Exports:** coffee, cloves, vanilla, graphite, cotton products. **Imports:** crude petroleum, consumer goods, foodstuffs. **Major trading partners:** U.S., France, Japan, Italy, Germany, U.K. and other E.C. countries.

MALAWI

Republic of Malawi

Location : Central Africa. Malawi is a landlocked country. Lake Malawi forms the main part of the eastern border, the large part of the Lake being territory of Malawi, with a smaller area under Mozambique. Mozambique surrounds the borders of the southern half of Malawi, with Zambia to the west and Tanzania to the north and east.

Area : 118,484 sq km

Population (est. 1998) : 10.4 million (average annual growth rate : est. 1995-2000, 2.5%)

Capital : Lilongwe

Largest cities : Biantyre, Mzuzu

Principal river : Shire

Highest point : Mount Sapitawa, 3,002 m (9,849 ft)

Flag : Three equal horizontal stripes of black, red and green, with a red rising sun on the centre of black stripe.

Monetary unit : Kwacha

Languages : English (official), Chichewa (national); also Tombuka

Religion : Christian, 75%; Islam, 20%

Literacy rate : 56.4% (1995)

Type of Government : One-party State

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$1.8 billion. Average annual growth (1995-96): 16.0%. Per capita income: \$180. Arable land: 25%. Principal agricultural products: tobacco, tea, sugar, corn, cotton. Labour force: 428,000; in agriculture: 43%; in industry: 16%. Major industrial products: food, beverages, tobacco, cement, footwear processed, consumer goods. Natural resource: limestone, uranium, coal, bauxite. **Exports:** tobacco, tea, sugar, coffee, peanuts. **Imports:** machinery, transport equipment, building and construction materials, fuels. **Major trading partners:** U.K., U.S., Japan, Germany, South Africa, Zambia, Zimbabwe.

MALAYSIA

Location : Located in South-east Asia, peninsular Malaysia occupies the southern parts of the Kra peninsula, with Sumatra (Indonesia) to the west across the Strait of Malacca and the South China Sea to the east. Thailand is to the north and Singapore island to the south, Sabah and Sarawak are adjoining territories on the north coast of Borneo. Indonesia occupies the larger southern part of Borneo and Brunei forms an enclave within Sarawak.

Area : 332,370 sq km
 Population (est. 1998) : 21.5 million (average annual growth rate : est. 1995-2000, 2.0%)
 Capital : Kuala Lumpur
 Largest cities : Kuala Lumpur, George Town (Pinang), Ipoh, Johor Baharu, Petaling Jaya, Kelang (Klang), Kota Baharu, Taiping, Seremban, Kuantan, Kota Kinabalu, Malacca (Melaka)
 Principal rivers : Pahang, Kelantan
 Highest point : Kinabalu (In Sabah), 4,101 m (13,455 ft)
 Flag : Fourteen horizontal stripes of red and white, with a blue quarter bearing a crescent and a star of 14 points, all in gold.
 Monetary unit : Ringgit
 Languages : Malay (official), Chinese, Tamil, English

Religion : Malays nearly all Muslim, Chinese predominantly Buddhists, Indians predominantly Hindu

Literacy rate : 83.5% (1995)
 Type of Government : Federal Parliamentary Democracy under a constitutional monarch
 Member of Commonwealth of Nations

Economic summary : Gross national product (1996) : \$89.8 billion. Average annual growth (1995-96) : 8.3%. Per capita income : \$4,370. Arable land : 3%. Principal agricultural products : natural rubber, palm products, rice. Labour force (1994) : 7,607,000. Major industrial products : processed rubber, timber, palm oil, tin, petroleum, light manufactures, electronics equipment. Natural resources : tin, oil, copper, timber. Exports : natural rubber, palm oil, tin, timber, petroleum. Imports : machinery, crude oil, capital equipment, chemicals, consumer goods. Major trading partners : Japan, Singapore, U.S., Western European countries,

MALDIVES

Republic of Maldives

Location : Maldives is a group of about 2,000 islands grouped into 12 clusters, situated about 700 km south-west of Sri Lanka in northern Indian Ocean.

Area : 298 sq km
 Population (est. 1998) : 282,000 (average annual growth rate : est. 1995-2000, 3.5%)

Capital and largest city : Male
 Principal rivers : There are no significant rivers

Highest point : 3 m (10 ft)
 Flag : Red with a green panel bearing a white crescent

Monetary unit : Maldivian Rufiyaa

Language : Divehi
 Religion : Islam
 Literacy rate : 93% (1995)
 Type of Government : Republic

Economic summary : Gross domestic product (1994) : \$254 million. Real growth rate (1993-94) : 18.1%. Per capita income : \$1,032. Arable land : 10%. Principal agricultural products : coconuts, millet. Labour force : 66,000; in fishing : 80%. Major products : fish, processed coconuts. Natural resources : fish, coconuts. Tourism is also an important sector of the economy. Export : fish, clothing, ambergris. Imports : rice, wheat, flour, sugar, drugs, textile, petroleum products. Major trading partners : U.S., U.K., Singapore, Thailand, Germany, India.

MALI

Republic of Mali

Location : North-west Africa. Algeria is located to the north of Mali, Niger to its east, Upper Volta (Burkina Faso), Ivory Coast (Cote D'Ivoire) and Guinea to its south, and Senegal and Mauritania to its west. The northern area of the country is part of the Sahara desert. There is an outlet to the sea via the Senegal and Niger rivers.

Area : 1,240,192 sq km
 Population (est. 1998) : 11.8 million (average annual growth rate : est. 1995-2000, 3%)

Capital : Bamako
 Largest cities : Segou, Mopti
 Principal rivers : Niger, Senegal, Faleme
 Highest point : Hombori Tondo, 1,155 m (3,789 ft)

Flag : Three vertical stripes of green, yellow and red

Monetary unit : Franc CFA
 Ethnic groups : Bambara, Peul, Soninke, Malinke, Songhai, Dogon, Senoufo, Minianka, Berbers and Moors

Languages : French (official), African languages
 Religion : Islam, 90%; Traditional, 9%; Christian, 1%

Literacy rate : 31.0% (1995)
 National name : Republique de Mali

Economic summary : Gross national product (1996) : \$2.4 billion. Average annual growth (1995-96) : 4.3%. Per capita income : \$240. Arable land : 2%. Principal agricultural products : millet, sorghum, corn, rice, sugar, cotton, peanuts, livestock. Labour force : 2,959,000; in agriculture : 80%. Major industrial products : processed foods, textiles, cigarettes, fish. Natural resources : bauxite, iron ore, manganese, phosphate, goats, salt, limestone, gold. Exports : meat, livestock,

(1995-96): 4.4%. Per capita income: \$470. Arable land: 1%. Principal agricultural products: livestock, millet, maize, wheat, dates, rice. Labour force: 465,000 (1981 est.): wage earners: 45,000; in industry and commerce: 14%. Major industrial products: iron ore, processed fish. Natural resources: copper, iron ore, gypsum, fish. Exports: iron ore, fish, gum arabic, gypsum. Imports: foodstuffs, petroleum, capital goods. Major trading partners: E.C., Japan, Cote D'Ivoire, Algeria, China, U.S.

MAURITIUS

Location : Mauritius is a group of islands located in the Western Indian Ocean. The main one is the island of Mauritius which lies 900 km east of the island of Madagascar. The other main islands are Rodrigues, Agalega and St. Brandon.

Area : 2,040 sq km

Population (est. 1998) : 1.2 million (average annual growth rate : 1.1%)

Capital and largest city : Port Louis

Other major cities : Beau Bassin/Rose Hill, Curepipe, Quatre Bornes

Principal rivers : Grand River South East, Grand River North West

Highest point : Piton de la Riviere Noire, 826 m (2,711 ft)

Flag : Horizontally four stripes of red, blue, yellow and green

Monetary unit : Mauritian rupee

Languages : English (official), French, Creole, Hindi, Urdu, Hakka, Bojpoori

Religion : Hindu, 52%; Christian, 28.3%; Islam, 16.6%; others, 3.1%

Literacy rate : 82.8%

Type of Government : Parliamentary democracy
Member of Commonwealth of Nations

Economic summary: Gross national product (1996): \$4.2 billion. Average annual growth (1995-96): 5.6%. Per capita income: \$3,710. Arable land: 54%. Principal agricultural products: sugarcane, rice. Labour force (1993): 489,000; in industry: 22%; in government services, 27%; in agriculture and fishing, 15%. Major products: processed sugar and tea, molasses, rum, textiles, electronic equipment. Natural resources: iron ore, gypsum, fish. Exports: sugar, tea, molasses. Imports: foodstuffs, manufactured goods. Major trading partners: E.C., U.S., South Africa.

MEXICO

United Mexican States

Location : North America. Mexico has a coastline on the Pacific Ocean and to the east

on the Gulf of Mexico, United States is located to the north and Guatemala to the south; Cuba is located 160 km to the east in the Caribbean Sea.

Area : 1,967,183 sq. km.

Population (est. 1998) : 95.8 million (average annual growth rate: 1.6%)

Capital : Federal District (Mexico City)

Largest cities : Guadalajara, Monterrey, Ciudad Juarez, Puebla, Leon.

Principal rivers : Rio Bravo de Norte (Rio Grande), Balsas, Grijalva, Panuco

Highest point : Volcan Citlaltepetl (Pico de Orizaba), 5,610 m (18,405 ft)

Flag : Three vertical stripes of green, white and red, with the national arms in the centre

Monetary unit : Mexican Peso

Languages : Spanish, Indian languages

Religion : Roman Catholic, 93.5%; Protestant, 4.9%; other religions, 5.4%.

Literacy rate : 89.6% (1995)

Type of Government : Federal Republic

National name : Estados Unidos Mexicanos

Economic summary : Gross national product (1996): \$341.7 billion. Average annual growth (1995-96): 6.6%. Per capita income: \$3,670. Arable land: 12%.

Principal agricultural products: rice, wheat, corn, cotton, coffee, sugarcane, fruits.

Labour force: 24,063,283 (1993); in manufacturing: 27.9%; in agriculture: 22.6%; in services: 46.1%.

Major products: processed foods, chemicals, basic metals and metal products, petroleum.

Natural resources: petroleum, silver, copper, gold, lead, zinc, natural gas, timber.

Exports: coffee, cotton, sugar, shrimp, cattle and meat, petroleum, sulphur.

Imports: machinery, equipment, industrial vehicles, intermediate goods. Major trading partners: U.S., Japan, Western European countries.

MICRONESIA

Federated States of Micronesia

Location : The country lies in the Western Pacific between 137° and 163° E, comprising 607 islands.

Area : 701 sq km

Population (est. 1998) : 515,000 (average annual rate of natural increase : est. 1995-2000, 3.3%)

Capital : Palikir

Largest cities : Palikir, Weno, Tofol, Colonia

Principal rivers : There are no rivers

Highest point : Mount Totolom, 791 m (2,595 ft)

Flag : Blue, with a ring of four white stars in the centre

Monetary unit : U.S. dollar

Languages : English is the official and common language. Major Indigenous languages are Turkish, Pohnpeian, Yapese and Kosrean

Religion : Nine ethnic Micronesian and Polynesian groups

Literacy rate : 89%

Type of Government : A constitutional government in free association with the U.S. since November 1986

National name : Federated States of Micronesia

Economic summary : Gross national product (1994) : \$310 million. Per capita income: \$2,560. Financial assistance from the U.S. is the primary source of revenue with the U.S. pledged to spend \$1 billion in the island in 1990s. Micronesia also earns about \$4 million a year in fees from foreign fishing concerns. Economic activity consists primarily of subsistence farming and fishing. Unemployment rate : 80%.

MOLDOVA

Republic of Moldova

Location : Moldova (formerly Moldavia) is bounded in the east and south by the Ukraine and on the west by Romania.

Area : 33,700 sq km

Population (est. 1998) : 4.5 million (average annual rate of natural increase : est. 1995-2000, 0.1%)

Capital : Chisinau (Kishinyov)

Largest cities : Chisinau (Kishiyov), Tiraspol, Beltsy, Bendery.

Principal rivers : Dnestr, Prut

Highest point : Balaneshity, 430 m (1,409 ft)

Flag : Three vertical stripes of blue, yellow and red, with the national arms in the centre

Monetary unit : Ruble

Language : Romanian, official language since 1989

Religion : Moldovan, 65%, Ukrainian, 14%, Russian 13%

Literacy rate : 99%

Type of Government : Republic

National name : Republica Moldaveneasca

Economic summary : Gross national product (1996): \$2.5 billion. Average annual growth (1995-96): -10.0%. Per capita income: \$590. Agriculture and food processing are the main industries. Others include power engineering, textiles, metal working, building materials, machine building, TV sets, washing machines and other consumer goods, and manufacturing of electrical appliances. Agriculture products are wheat, corn, barley, sugar beets, fruits and wine grapes,

soybeans, tobacco and animal husbandry. Eighty-five per cent of the land is cultivated. Lignite, phosphorous, gypsum and valuable building materials and mined. All ploughing and sowing is mechanised. The land under cultivation (November 1990) is 2.9 million hectares. The agricultural products comprise of grain, sugar-beet, vegetables, fruit, grapes, meat, milk and eggs.

MONACO

Principality of Monaco

Location : Located in Southern Europe, Monaco forms an enclave on the Mediterranean Sea coast of France.

Area : 465 acres (1.5 sq km)

Population (est. mid-1997) : 31,892 (average annual growth rate : 0.49%)

Capital : Monaco-Ville

Largest cities : Monaco, Monte-Carlo

Principal river : Vesubie

Highest point : On Chemin de Revoires, 162 m (533 ft)

Flag : Horizontally red over white

Monetary unit : French Franc

Languages : French, Monegasque, Italian

Religion : Roman Catholic, 90%

Literacy rate : 99%

Type of Government : Constitutional Monarchy

National name : Principauté de Monaco

Economic summary: Gross domestic product (1994): \$765 million. Real growth rate: -1.3%. Per capita income: \$24,693.

MONGOLIA

Mongolian People's Republic

Location : Central Asia. Mongolia is a landlocked country. Republics of former Soviet Union are to the north and China to the east, south and west.

Area : 1,565,000 sq km

Population (est. 1998) : 2.6 million (average annual growth rate : est. 1995-2000, 2.1%)

Capital and largest city : Ulan Bator

Other major cities : Darhan, Eerdenet

Principal rivers : Selenge, Orhon, Hereleng

Highest point : Mont Hayrhan Uul, 4,362 m (14,311 ft)

Flag : Three vertical stripes of red, sky blue and red, with a golden *soyombo* emblem in the hoist.

Monetary unit : Tugrik

Language : Mongolian, 90%; also Turkic, Russian and Chinese.

Religion : Predominantly Tibetan Buddhist, Islam, about 4%

Literacy rate : 83%

National name : Bugd Nalramdakh Mongol Ard
Uls

Economic summary : Gross national product (1996): \$0.9 billion. Average annual growth (1995-96): 2.0%. Per capita income: \$360. Arable land: 1%. Principal agricultural products: livestock, wheat, oats, barley. Major industrial products: animal products, building materials, minerals. Natural resources: coal, copper, molybdenum, iron, oil, lead, gold, tungsten. **Exports:** copper, cashmere, livestock, animal products, wool, non-ferrous metals. **Imports:** machinery and equipment, clothing, petroleum, chemicals, sugar, tea. Major trading partners: C.I.S. nations, China, Japan, Austria.

MOROCCO

Kingdom of Morocco

Location : North-west Africa. Morocco is located on the north-west corner of Africa and has a coastline on the Atlantic Ocean and the Mediterranean Sea. Algeria is to the east of country and Western Sahara to its south.

Area : 458,730 sq km

Population (est. 1998) : 28 million (average annual growth rate : est. 1995-2000, 1.8%)

Capital : Rabat

Largest cities : Casablanca, Rabat-Sale, Fez, Marrakech, Laayoune, 100,000; Other major cities: Oujda, Kenitra, Tetouan

Principal rivers : Oued Dra, Oued Moulouya, Sebou

Highest point : Jabel Toubkal, 4,165 m (13,665 ft)

Flag : Red, with a green pentacle star in the centre

Monetary unit: Dirham

Languages : Arabic, French, Berber dialects.

Religion : Islam, 98%; Christian, 2%

Literacy rate : 43.7% (1995)

Type of Government : Constitutional Monarchy

National name : al-Mamlaka al-Maghrebia

Economic summary : Gross national product (1996): \$34.9 billion. Average annual growth (1995-96): 12.4%. Per capita income: \$1,290.

Arable land : 20%. Principal agricultural products: barley, wheat, citrus fruits, vegetables. Labour force: (1993) : 3,659,319; in agriculture 50%; in services, 26%. Major products: textiles, fish, chemicals. Natural resources: phosphates, manganese, lead, fisheries. **Exports:** phosphates, citrus fruits, canned fruits and vegetables; canned fish, carpets. **Imports:** Industrial capital goods, fuels, foodstuffs, iron and steel. **Major trading**

partners: E.C., C.I.S. countries, Japan, U.S, India, Iraq.

MOZAMBIQUE

People's Republic of Mozambique

Location : South-east Africa. Mozambique has a coastline on the Indian Ocean. Tanzania, Malawi and Zambia are located to its north, Zimbabwe, Swaziland and South Africa to its south-west.

Area : 799,380 sq km

Population (est. 1998) : 18.7 million (average annual growth rate : est. 1995-2000, 2.5%)

Capital and largest city : Maputo,

Other major cities : Beira, Nampula

Principal rivers : Limpopo, Zambezi, Shira

Highest point : Mount Binga, 2,436 m (7,992 ft)

Flag : Horizontally green, black and yellow with the black fimbriated in white; a red triangle based on the hoist, charged with a yellow star surmounted by an open white book and a crossed rifle and hoe in black.

Monetary unit : Metical

Languages : Portuguese (official); Bantu languages

Religion : Traditional, 60%; Christian, 30%; Islam, 10%

Literacy rate : 40% (1995)

Type of Government : Socialist one-party state

National name : Republica de Mocambique

Economic summary : Gross national product (1996): \$1.5 billion. Average annual growth (1995-96): 8.7%. Per capita income: \$80. Arable land : 4%. Principal agricultural products: cotton, cashew nuts, sugar, tea, copra, wheat, peanuts. Labour force in agriculture: 90%. Major products: processed foods, petroleum products, beverages, textiles, tobacco. Natural resources: bauxite, coal, iron ore, fluorite, tantalite, timber. **Exports:** cashew nuts, cotton, sugar, tea, shrimp, copra, prawns, citrus, textiles. **Imports:** machinery and electrical equipment, foodstuffs, cotton textiles, vehicles, petroleum products, iron and steel. Major trading partners: U.S., Western Europe, Japan, C.I.S. countries.

MYANMAR (BURMA)

Union of Myanmar

Location : Located in East Asia, Myanmar has a coastline on the Bay of Bengal. Bangladesh and India are to its west, China to its north and Laos and Thailand to its east.

Area : 676,577 sq km

Population (est. 1998) : 47.6 million (average annual growth rate : est. 1995-2000, 1.8%).

Capital : Yangon (Rangoon)

Largest cities : Mandalay, Moulmein, Bassein,

Pegu

Principal rivers : Irrawaddy, Sittang, Mekong

Highest point : Hkakado Razi, 5,881 m

(19,296 ft)

Flag : Red with a blue canton bearing two ears of rice within a cog-wheel and a ring of 14 stars, all in white.

Monetary unit : Kyat

Language : Burmese; minority languages

Religion : Buddhist, 85%; animist, Islam, Christian, or others, 15%

Literacy rate : 83% (1995)

Type of Government : Military

National name : Pyidaungsu Myanmar

Naingngandau

Economic summary : Gross national product (1994): \$67.6 billion. Average annual growth (1993-94): 28%. Per capita income (1994): \$1,485. Arable land: 15%. Principal products: sugarcane, corn, rice, peanuts. Labour force (1995): 25.81 m; in industry: 14.3%. Major products: textiles, footwear, processed agricultural products, wood and wood products, refined petroleum. Natural resources: timber, tin, antimony, zinc, copper, precious stones, crude oil, natural gas. Exports: rice, teak, oil seeds, metals, rubber, gems. Imports: machinery, construction and transportation equipment, manufactured goods. Major trading partners: Japan, E.C., China, South-east Asia. Myanmar is the world's largest illicit producer of opium poppy. (Since overtaken by Afghanistan)

NAMIBIA

Republic of Namibia

Location : The country is located in South-West Africa. With a coastline on the Atlantic Ocean, Angola is to the north, Botswana to the east and South Africa to the south. The Caprivi Strip, at the north-east corner, runs east between Botswana and Angola and forms a small border with Zambia. Walvis Bay, part of South Africa, forms an enclave, about 650 km north of Cape Province.

Area : 824,268 sq km

Population (est. 1995) : 1.7 million (average annual growth rate : est. 1995-2000, 2.4%)

Capital : Windhoek

Summer capital : Swakopmund

Principal river : Orange

Highest point : Brandberg, 2,573 m (8,441 ft)

Flag : Divided diagonally blue over green by a red white-edged stripe, in the center centre a yellow sun of 12 rays

Monetary unit : Namibian dollar

Languages : Afrikaans, German, English (official), several indigenous

Religion : Predominantly Christian

Literacy rate : 38.4%

Type of Government : Republic

National name : Republic of Namibia

Economic summary : Gross national product (1996): \$3.6 billion. Average annual growth (1995-96): 2.8%. Per capita income: \$2,250. Arable land: 1%. Principal agricultural products: corn, millet, sorghum, livestock. Labour force: 500,000; in agriculture, 60%, in industry: 10%. Major products: canned meat, dairy products, tanned leather, textiles, clothing. Natural resources: diamonds, copper, lead, zinc, uranium, fish. Exports: diamonds, copper, lead, zinc, beef, cattle, karamul pets, marble, semi precious stones, gold. Imports: construction materials, fertilizer, grain, foodstuffs, petroleum products, fuel. Major trading partners: South Africa, France, Germany, Switzerland, U.S., Japan.

NAURU

Republic of Nauru

Location: West Pacific Ocean. Australia is 2,000 km to the south-west, with Easter Island 300 km to the east

Area : 210 sq km

Population (est. mid-1997) : 10,200 (average annual growth rate : 1.22%)

Capital : Yaren

Principal rivers : There are no rivers

Highest point : On the central plateau, 62 m (205 ft)

Flag : Blue with a narrow horizontal gold stripe across the center. Between the top and bottom is a white star of 12 points

Monetary unit : Australian dollar

Languages : Nauruan, English

Religion : Protestant, 50%; Roman Catholic, 24%; Confucian and Taoist, 8%

Literacy rate : 99%

Type of Government : Republic

Special relationship with the Commonwealth of Nations

Economic summary : Gross national product (1994): \$275 million. Per capita income: \$26,666. Major national products: phosphate, tourism, copra, coconut products. Exports: phosphate, copra. Imports: foodstuffs and machinery. Major trading partners: Australia, New Zealand, Japan.

National name : Bugd Nairamdakh Mongol Ard
Uls

Economic summary : Gross national product (1996): \$0.9 billion. Average annual growth (1995-96): 2.0%. Per capita income: \$360. Arable land: 1%. Principal agricultural products: livestock, wheat, oats, barley. Major industrial products: animal products, building materials, minerals. Natural resources: coal, copper, molybdenum, iron, oil, lead, gold, tungsten. Exports: copper, cashmere, livestock, animal products, wool, non-ferrous metals. Imports: machinery and equipment, clothing, petroleum, chemicals, sugar, tea. Major trading partners: C.I.S. nations, China, Japan, Austria.

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Largest cities : Casablanca, Rabat-Sale, Fez, Marrakech, Laayoune, 100,000; Other major cities: Oujda, Kenitra, Tetouan

Principal rivers : Oued Dra, Oued Moulouya, Sebou

Highest point : Jebel Toubkal, 4,165 m (13,665 ft)

Flag : Red, with a green pentacle star in the centre

Monetary unit: Dirham

Languages : Arabic, French, Berber dialects, *amizi*

Religion : Islam, 98%; Christian, 2%

Literacy rate : 43.7% (1995)

Type of Government : Constitutional Monarchy

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partners: E.C., C.I.S. countries, Japan, U.S, India, Iraq.

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Monetary unit : Metical

Languages : Portuguese (official); Bantu languages

Religion : Traditional, 60%; Christian, 30%; Islam, 10%

Literacy rate : 40% (1995)

Type of Government : Socialist one-party state

National name : Republica de Mocambique

Economic summary : Gross national product (1996): \$1.5 billion. Average annual growth (1995-96): 8.7%. Per capita income: \$80. Arable land : 4%. Principal agricultural products: cotton, cashew nuts, sugar, tea, copra, wheat, peanuts. Labour force in agriculture: 90%. Major products: processed foods, petroleum products, beverages, textiles, tobacco. Natural resources: bauxite, coal, iron ore, fluorite, tantalite, timber. Exports: cashew nuts, cotton, sugar, tea, shrimp, copra, prawns, citrus, textiles. Imports: machinery and electrical equipment, foodstuffs, cotton textiles, vehicles, petroleum products, iron and steel. Major trading partners: U.S., Western Europe, Japan, C.I.S. countries.

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Flag : Red with a blue canton bearing two ears of rice within a cog-wheel and a ring of 14 stars, all in white.

Monetary unit : Kyat

Language : Burmese; minority languages

Religion : Buddhist, 85%; animist, Islam, Christian, or others, 15%

Literacy rate : 83% (1995)

Type of Government : Military

National name : Pyidaungsu Myanmar Naingngandau

Economic summary : Gross national product (1994): \$67.6 billion. Average annual growth (1993-94): 28%. Per capita income (1994): \$1,485. Arable land: 15%. Principal products: sugarcane, corn, rice, peanuts. Labour force (1995): 25.81 m; in industry: 14.3%. Major products: textiles, footwear, processed agricultural products, wood and wood products, refined petroleum. Natural resources: timber, tin, antimony, zinc, copper, precious stones, crude oil, natural gas. Exports: rice, teak, oil seeds, metals, rubber, gems. Imports: machinery, construction and transportation equipment, manufactured goods. Major trading partners: Japan, E.C., China, South-east Asia. Myanmar is the world's largest illicit producer of opium poppy. (Since overtaken by Afghanistan)

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Area : 824,268 sq km

Population (est. 1998) : 1.7 million (average annual growth rate : est. 1995-2000, 2.4%)

Capital : Windhoek

Summer capital : Swakopmund

Principal river : Orange

Highest point : Brandberg, 2,579 m (8,461 ft)

Flag : Divided diagonally blue over green by a red white-edged stripe. In the canton centre a yellow sun of 12 rays.

Monetary unit : Namibian dollar

Languages : Afrikaans, German, English (official), several indigenous

Religion : Predominantly Christian

Literacy rate : 38.4%

Type of Government : Republic

National name : Republic of Namibia

Economic summary : Gross national product (1996): \$3.6 billion. Average annual growth (1995-96): 2.8%. Per capita income: \$2,250. Arable land: 1%. Principal agricultural products: corn, millet, sorghum, livestock. Labour force: 500,000; in agriculture, 60%, in industry: 19%. Major products: canned meat, dairy products, tanned leather, textiles, clothing. Natural resources: diamonds, copper, lead, zinc, uranium, fish. Exports: diamonds, copper, lead, zinc, beef, cattle, karakul pelts, marble, semi precious stones, gold. Imports: construction materials, fertiliser, grain, foodstuffs, petroleum products, fuel. Major trading partners: South Africa, France, Germany, Switzerland, U.S., Japan.

NAURU

Republic of Nauru

Location : West Pacific Ocean. Australia is 2,000 km to the south-west, with Banaba (Klribati) 300 km to the east

Area : 21.3 sq km

Population (est. mid-1997) : 10,390 (average annual growth rate : 1.42%)

Capital : Yaren

Principal rivers : There are no rivers

Highest point : On the central plateau 68 m (225 ft)

Flag : Blue with a narrow horizontal gold stripe across the centre. Beneath this near the hoist is a white star of 12 points.

Monetary unit : Australian dollar

Languages : Nauruan, English

Religion : Protestant, 58%; Roman Catholic, 24%; Confucian and Taoist, 8%

Literacy rate : 99%

Type of Government : Republic

Special relationship within the Commonwealth of Nations

Economic summary : Gross national product (1994): \$276 million. Per capita income: \$25,094. Major industrial products: phosphates. Natural resources: phosphates. Exports: phosphates. Imports: foodstuffs, fuel, machinery. Major trading partners: Australia, New Zealand, U.K., Japan.

dairy products. Livestock. Labour force (March 1995) : 1,608,100; in services, 67.4%; in manufacturing, 19.6%. Major products: primary foods, textiles, machinery, transport equipment, wood and paper products. Natural resources: forests, coal, gold, tungsten, iron ore, asbestos. Exports: meat, dairy products, wool. Imports: machinery, minerals, chemicals, consumer goods. Major trading partners: Australia, Japan, U.S., E.C, China, South Korea, Taiwan.

NICARAGUA

Republic of Nicaragua

Location : Central America. The Caribbean Sea is to the east and Pacific Ocean to the west, with Honduras to the north and Costa Rica to the south.

Area : 130,671 sq km

Population (est. 1998) : 4.5 million (average annual growth rate : est. 1995-2000, 2.0%)

Capital and largest city : Managua

Other major cities : Leon, Granada

Principal rivers : Coco, Rio Grande, San Juan, Escondido

Highest point : Pico Mogoton, 2,107 m (9,913 ft)

Flag : Three horizontal stripes of blue, white and blue, with the national arms in the centre

Monetary unit : Cordoba

Language : Spanish

Religion : Roman Catholic, 95%; Protestant, 5%

Literacy rate : 65.7% (1995)

Type of Government : Republic

National name : Republica de Nicaragua

Economic summary : Gross national product

US\$ 1,300 million (1995)

Area : 130,671 sq km

Population (est. 1998) : 4.5 million (average annual growth rate : est. 1995-2000, 2.0%)

Capital and largest city : Managua

Other major cities : Leon, Granada

Principal rivers : Coco, Rio Grande

Highest point : Pico Mogoton, 2,107 m (9,913 ft)

Flag : Three horizontal stripes of blue, white and green, with an orange star in the centre of the white stripe

Monetary unit : Cordoba

Ethnic groups : Mestizo, 84%, Mestizo and Spanish, 2%, Indian, 10%

Language : Spanish (official), Mestizo, English, Arabic

Religion : Roman Catholic, 95%, Protestant, 5%

Literacy rate : 65.7% (1995)

Type of Government : Republic

National name : Republica de Nicaragua

Economic summary : Gross national product (1995) : \$1.3 billion Average annual growth (1995-98) : 2.0% Per capita income : \$2,000 (1995) Land : 130,671 sq km (1995) Forest : 130,671 sq km (1995) Agriculture : 130,671 sq km (1995) Livestock : 130,671 sq km (1995) Fisheries : 130,671 sq km (1995) Manufacturing : 130,671 sq km (1995) Services : 130,671 sq km (1995) Major industries : 130,671 sq km (1995) Major exports : 130,671 sq km (1995) Major imports : 130,671 sq km (1995)

Languages : English (official), Hausa, Yoruba, Ibo

Religion : Islam, 48%; Christian 34%; Indigenous, 18%

Literacy rate : 57% (1995)

Type of Government : Military

Membership of Commonwealth of Nations : Kept on abeyance for one year.

Economic summary: Gross national product (1996): \$27.6 billion. Average annual growth (1995-96): 5.0%. Per capita income: \$240. Arable land: 31%. Principal agricultural products: peanuts, cotton, cocoa, grains, fish, yams, cassava, livestock. Labour force (1985): 42,844,000; in agriculture: 54%; in government: 15%; in industry: 19%. Major products: crude oil, natural gas, coal, tin, processed rubber, cotton, petroleum, wood, hides, textiles, cement, footwear, chemicals. Natural resources: petroleum, tin, columbite, iron ore, coal, limestone. Exports: oil, cocoa, palm products, rubber, tin. Imports: machinery and transport equipment, manufactured goods, chemicals. Major trading partners: Western European countries, U.S., Japan.

NORWAY

Kingdom of Norway

Location : Located in North-west Europe. Norway has a long coastline on the North Sea, Norwegian Sea and Arctic Ocean. Sweden is to its east and there are borders with Finland and Republics of former Soviet Union in the north-east. The Svalbard archipelago is to the north in the Arctic Ocean and Jan Mayen Island is between Svalbard and Iceland.

Area : 323,752 sq km

Population (est. 1998) : 4.4 million (average annual growth rate : est. 1995-2000, 0.4%)

Capital : Oslo

Largest cities : Bergen, Trondheim, Stavanger, Kristian sand, Drammen, Tromsø

Principal rivers : Glomma (Glama), Lagen, Tanælv

Highest point : Galdhopiggen, 2,469 m (8,098 ft)

Flag : Red with blue white-bordered Scandinavian cross edged with white.

Monetary unit : Norwegian Krone

Language : Norwegian

Religion : Evangelical Lutheran (state), 94%, other Protestant and Roman Catholic, 4%

Literacy rate : 99%

Type of Government : Hereditary Constitutional Monarchy

National name : Kongeriket Norge

Economic summary: Gross national product (1996): \$151.2 billion. Average annual growth

(1995-96): 5.1%. Per capita income: \$34,510. Arable land: 3%. Principal agricultural products: dairy products, livestock, grain, potatoes, furs, wool. Labour force: (1994) : 2,151,000; services, 34.7%; commerce, 18%; mining and manufacturing, 16.6%. Major products: oil and gas, fish, pulp and paper, ships, aluminium, iron, steel, nickel, fertilisers, transportation equipment, hydroelectric power, petrochemicals, electronic equipment. Natural resources: fish, timber, hydroelectric power, ores, oil, gas. Exports: oil, natural gas, ships, fish products, chemicals, pulp and paper, aluminium. Imports: machinery, fuels and lubricants, transportation equipment, chemicals, motor vehicles, foodstuffs, iron and steel, textiles and clothing. Major trading partners: U.K., Sweden, Germany, U.S., Denmark, Netherlands, Japan.

OMAN

Sultanate of Oman

Location : Middle East. Oman is located at the south-east of the Arabian Peninsula, with a coastline to the south-east on the Arabian Sea and to the north-east on the Gulf of Oman. Saudi Arabia and United Arab Emirates are to its north-west and South Yemen to its south-west. The territory includes the offshore Kuria, Muria and Masirah islands.

Area : 212,458 sq km

Population (est. 1998) : 2.5 million (average annual growth rate : est. 1995-2000, 4.2%)

Capital and largest city : Muscat

Principal rivers : There are no significant rivers

Highest point : Jabal ash Sham, 3,170 m (10,400 ft)

Flag : Red, with a white panel in the upper fly and a green one in the lower fly. In the canton is the national emblem in white.

Monetary unit : Omani rial

Language : Arabic (official); also English and Indian languages

Religion : Islam, 87.7%

Literacy rate : 41%

Type of Government : Absolute Monarchy

National name : Sultanat Oman

Economic summary: Gross national product (1994): \$11.8 billion. Average annual growth (1993-94): 1.3%. Per capita income (1994): \$5,698. Principal agricultural products: dates, cereals, livestock, bananas. Labour force: 526,018; in agriculture: 60%. Major industries: petroleum drilling, fishing, construction. Natural resources: oil, marble, copper, limestone, chromium, manganese, iron. Exports: oil. Imports: machinery

and transport equipment, food, lubricants, mineral fuels. Major trading partners: U.K., U.S., Germany, Japan, UAE, South Korea, Singapore.

PAKISTAN

Islamic Republic of Pakistan

Location : South-west Asia. Pakistan has a coastline on the Arabian Sea to the south. Iran is located to its west, Afghanistan to its north-west, China to its north-east and India to the east.

Area : 803,936 sq km

Population (est. 1998) : 147.8 million (average annual growth rate : est. 1995-2000, 2.7%)

Capital : Islamabad

Largest cities : Karachi, Lahore, Faisalabad (Lyallpur), Rawalpindi, Hyderabad, Multan, Gujranwala, Peshawar, Sialkot

Principal rivers : Indus, Sutlej, Chenab, Ravi, Jhelum

Highest point : K2 (Mount Godwin Austin), 8,607 m (28,238 ft)

Flag : Green charged at the centre, with a white crescent and white five-pointed star. A white vertical stripe at the mast to one-quarter of the flag.

Monetary unit : Pakistan rupee

Principal languages : Urdu (national), English (official), Punjabi, Sindhi, Pashtu and Baluchi

Religions : Islam, 97%; Hindu, Christian, Buddhist, Parsi

Literacy rate : 38% (1995)

Type of Government : Parliamentary democracy in a federal setting. (Now under Military Dictatorship since October 12, 1999 for the 4th time)

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$63.6 billion. Average annual growth (1995-96): 3.1%. Per capita income: \$480. Arable land: 26%. **Principal agricultural products:** wheat, rice, cotton. **Labour force (1992) :** 33.71 m.; in agriculture, 54%; in services, 33%. **Major products:** cotton textiles, processed foods, petroleum products, construction material. **Natural resources:** natural gas, limited petroleum, iron ore. **Exports:** cotton, rice, carpets, textiles, clothings. **Imports:** foodgrains, edible oil, crude oil, machinery, chemicals, transport equipment. **Major trading partners:** U.S., E.C., Japan.

PANAMA

Republic of Panama

Location : Central America. Panama is located at the southern end of the Central American isthmus. The land runs from west to east with the Caribbean Sea to the north and Pacific Ocean to

the south. Costa Rica is located to the north-west and Colombia to the east and south.

Area : 77,082 sq km

Population (est. 1998) : 2.8 million (average annual growth rate : est. 1995-2000, 1.6%)

Capital and largest city : Panama City

Other major cities : San Miguelito, Colon, David

Principal rivers : Tuira (with Chucunaque) Bayano, Santa Maria

Highest point : Baru, 3,475 m (11,467 ft)

Flag : There are four quarters. The first is a white panel with a blue star, second red, third blue and fourth white with a red star.

Monetary unit : Balboa

Language : Spanish (official); many bilingual in English

Religion : Roman Catholic, 95%; Protestant, 5%

Literacy rate : 91%

Type of Government : Constitutional democracy

National name : Republica de Panama

Economic summary : Gross national product (1996): \$8.2 billion. Average annual growth (1995-96): 5.8%. Per capita income: \$3,080. Arable land: 6%. **Principal agricultural products:** bananas, corn, sugar, rice, cattle. **Labour force:** 856,200 (1991); in industry: 10.5%; in services, 27.9%. **Major industrial products:** refined petroleum, sugar, cement, paper products. **Natural resources:** copper, mahogany, shrimp. **Exports:** bananas, refined petroleum, sugar, clothing, shrimp. **Imports:** petroleum, chemicals, machinery and transport equipment, capital goods, food. **Major trading partners:** U.S., Central America and the Caribbean, Western Europe, Mexico.

PAPUA NEW GUINEA

Location : Located in West Pacific Ocean, Papua New Guinea, includes the eastern side of the island of New Guinea, the Bismarck archipelago (New Britain, New Ireland and Admiralty Islands), Northern Solomon Islands (including Bougainville and Buka), islands at the eastern tip of New Guinea (D'Entree, Casteaux, Trobriand, Woodlark islands and Louisiade archipelago) and about 600 smaller islands. West Irian (Indonesia) is to the west, comprising the western part of the island of New Guinea, Australia to the south and Solomon Islands to the east.

Area : 462,840 sq km

Population (est. 1998) : 4.6 million (average annual growth rate : est. 1995-2000, 2.2%)

Capital and largest city : Port Moresby

Other major cities : Lae, Madang, Wau, etc.

Principal rivers : Fly (with Strickland), Sepik
Highest point : Mount Wilhelm, 4,509 m (14,493 ft)

Flag : Diagonally ochre-red over black. On the red portion is a bird of paradise in gold and on the black five stars of the Southern Cross in white.

Monetary unit : Kina

Languages : English, Melanesian pidgin, Hiri Motu, and 717 distinct native languages

Religions : Over half Christian, remainder indigenous

Literacy rate : 72.2% (1995)

Type of Government : Parliamentary Democracy
Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$5.0 billion. Average annual growth (1995-96): -0.1%. Per capita income: \$1,150. Principal agricultural products: coffee, copra, palm oil, cocoa, tea, coconuts, cattle. Labour force (1987): 145,331; agricultural activities including fishing : 54%; industry and commerce : 9%. Major industrial products: clothing, light fabricated metal products, furniture. Natural resources: copper, gold, silver, timber, natural gas. Exports: gold, copper, coffee and cocoa, copra, lobster, timber. Imports: machinery, transport equipment, fuels, chemicals. Major trading partners: Australia, U.K., Japan, Germany, Singapore, Spain, New Zealand, U.S.

PARAGUAY

Republic of Paraguay

Location : Central South America. Brazil is to the north and east, Argentina to the south and Bolivia to the north and west. Paraguay is a landlocked country but has a river access to the Atlantic (River Plate).

Area : 406,752 sq km

Population (est. 1998) : 5.2 million (average annual growth rate : est. 1995-2000, 2.6%)

Capital and largest city : Asuncion

Other major cities : San Lorenzo (part of Asuncion agglomeration), Ciudad del Este, Pedro Juan Caballero, Concepcion, Encarnacion

Principal rivers : Paraguay, Parana, Pilcomayo

Highest point : Cerro Tatug, 700 m (2,297 ft)

Flag : Three horizontal stripes of red, white and blue. The white stripe is charged with the arms of the Republic on the obverse and, on the reverse, with a lion and the inscription *Pazy Justicia*. This is the only flag in the world with different obverse and reverse.

Monetary unit : Guarani

Languages : Spanish (official), Guarani

Religion : Roman Catholic, 90%

Literacy rate : 92% (1995)

Type of Government : Republic

National name : Republica del Paraguay

Economic summary : Gross national product (1996): \$9.2 billion. Average annual growth (1995-96): 1.1%. Per capita income: \$1,850. Arable land: 20%. Principal agricultural products: soybeans, cotton, cassava, sweet potatoes, tobacco, corn, rice, sugarcane. Labour force: (1992): 1,641,000; in agriculture, 44%, in industry: 34%. Major products: packed meats, crushed oilseeds, beverages, textiles, light consumer goods, cement. Natural resources: iron ore, timber, manganese, limestone. Exports: soybean, oilseeds, meat products, tobacco, timber, coffee, tung oil, vegetable oils. Imports: fuels and lubricants, machinery and motors, motor vehicles, beverages, tobacco, foodstuffs. Major trading partners: Argentina, Brazil, U.S., E.C., Japan.

PERU

Republic of Peru

Location : Peru is located west of South America. It has a coastline on the Pacific Ocean. Ecuador and Colombia are to its north, Brazil and Bolivia to its east and Chile to its south.

Area : 1,244,284 sq km

Population (est. 1998) : 24.8 million (average annual growth rate : est. 1995-2000, 1.7%)

Capital : Lima

Largest cities : Lima, Arequipa, Callao, Trujillo, Chiclayo.

Principal rivers : Amazon, Ucayali, Napo, Marañon

Highest point : Huascaran, 6,768 m (22,205 ft)

Flag : Three vertical stripes of red, white and red, with the national arms in the centre.

Monetary unit : Nuevo Sol

Languages : Spanish, Quechua, Aymara and other native languages

Religion : Roman Catholic

Literacy rate : 89% (1995)

Type of Government : Constitutional Republic

National name : Republica del Peru

Economic summary : Gross national product (1996): \$58.7 billion. Average annual growth (1995-96): 2.0%. Per capita income: \$2,420. Arable land: 3%. Principal agricultural products: wheat, rice, beans, corn, cotton, coffee, wool. Labour force: (1993): 7,109,527; in industry: 19%. Major products: processed minerals, fish meal, refined petroleum, textiles. Natural resources: silver, gold, iron, copper, fish, petroleum, timber. Exports: copper, fish products, cotton, sugar, coffee, lead,

silver, zinc. **Imports:** machinery, foodstuffs, chemicals, pharmaceuticals, transport equipment. **Major trading partners:** U.S., Japan, Western European and Latin American countries.

THE PHILIPPINES

Republic of the Philippines

Location: Located in the Western Pacific Ocean, Philippines is a chain of some 7,100 islands to the north-east of Borneo and north of the Celebes and Moluccas (Indonesia). The main islands are Luzon and Mindanao.

Area: 300,000 sq km

Population (est. 1998): 72.2 million (average annual growth rate: 2.0%)

Capital: Manila

Largest cities: Manila, Quezon City, Davao, Cebu, Caloocan City, Zamboanga City, Pasay City, Bacolod City

Principal rivers: Cagayan, Pampanga, Abra, Agusan, Magat, Agno

Highest point: Mount Apo, 2,954 m (9,692 ft)

Flag: Horizontally blue over red, with a white triangle based on the hoist bearing a gold sun of eight rays and three gold stars.

Monetary unit: Peso

Languages: Filipino (based on Tagalog), English, Cebuano, Ilocano, Tagalog, others

Religion: Roman Catholic, 83%; Islam, 5%; Protestant, 9%; Buddhist and others, 3%

Literacy rate: 94.6% (1995)

Type of Government: Republic

National name: Republika ng Pilipinas

Economic summary: Gross national product (1996): \$83.3 billion. Average annual growth (1995-96): 6.9%. Per capita income: \$1,160. Arable land: 26%. Principal products: rice, corn, coconuts, sugarcane, bananas, tobacco. Labour force (1993): 26.8 m.; in agriculture, 46%; in services 18.5%; in industry and commerce, 16%. Major products: processed agricultural products, textiles, chemicals and chemical products. Natural resources: forests, metallic and non-metallic minerals. **Exports:** electronic equipment, coconut products, fish products, cotton, coffee, lead, zinc, oil, sugar, logs and lumber, copper concentrates, bananas, garments, nickel. **Imports:** machinery, food stuffs, chemicals, pharmaceuticals, transport equipment. **Major trading partners:** U.S., Japan, Western European and Latin American Countries.

POLAND

Republic of Poland

Location: Located in Eastern Europe, Poland has a northern coastline on the Baltic Sea. Republics of former Soviet Union are to its east,

Czechoslovakia to its south and Germany to the west.

Area: 312,685 sq km

Population (est. 1998): 38.7 million (average annual growth rate: est. 1995-2000, 0.1%)

Capital: Warsaw (Warszawa)

Largest cities: Warsaw, Lodz, Krakow, Wroclaw, Poznan, Gdansk, Szczecin, Katowice, Bydgoszcz, Lublin, Bialystok, Sosnowiec, Czestochowa, Gdynia

Principal rivers: Vistula (Wasa), Oder (Odra), Narew

Highest point: Rysy, 2,499 m (8,199 ft)

Flag: Horizontally white over red, with the arms of Poland on the white stripe.

Monetary unit: Zloty

Language: Polish

Religion: Roman Catholic, 95%; Russian Orthodox, Protestant and others, 5%

Literacy rate: 98%

Type of Government: Democratic state

National name: Rzeczpospolita Polska

Economic summary: Gross national product (1996): \$124.7 billion. Average annual growth (1995-96): 6.3%. Per capita income: \$3,230. Arable land: 46%. Principal agricultural products: rye, rapeseed, grains, sugar beets, potatoes, hogs and other livestock. Labour force: 28.38 m. (1993); in agriculture, 36.1%; in industry and commerce 27.3%. Major products: iron and steel, chemicals, textiles, processed foods, transport equipment. Natural resources: coal, sulphur, copper, natural gas. **Exports:** coal, machinery and equipment, chemicals, industrial products. **Imports:** machinery and equipment, chemicals, fuels, raw materials, food products. **Major trading partners:** Germany, Italy, U.K., Switzerland, Austria

PORTUGAL

Portuguese Republic

Location: Located in South-west Europe Portugal forms the western edge of the Iberian Peninsula, with a coastline on the Atlantic Ocean. Spain is located to its east and north. The Azores and Madeira Islands in the Atlantic Ocean form part of the territory

Area: 91,905 sq km

Population (est. 1998): 9.8 million (average annual growth rate: est. 1995-2000, 0.1%)

Capital: Lisbon

Largest cities: Lisbon, Oporto, Aveiro (part of Lisbon agglomeration), Braga, Vila Nova de Gaia, Funchal

Principal rivers: Tagus, Douro, Tejo, Guadiana

Highest point : Pico, 2,315 m (7,313 ft) in the Azores. Malhao de Estrela, 1,993 m (6,537 ft) is the highest on the mainland.

Flag : Vertical green and red, with the red of double width, and overall on the dividing line the national arms.

Monetary unit : Escudo

Language : Portuguese

Religion : Roman Catholic, 97%; Protestant, 1%; Others, 2%

Literacy rate : 85%

Type of Government : Parliamentary democracy

National name : Republica Portuguesa

Economic summary : Gross national product (1996): \$100.9 billion. Average annual growth (1995-96): 2.4%. Per capita income: \$10,160. Arable land: 32%. Principal agriculture products: grains, potatoes, olives, wine grapes. Labour force (1994): 4,733,000; in services, 45%; in agriculture, 20%; in industry 35%. Major products: textiles, footwear, wood pulp, paper, cork, metal products, refined oil, chemicals, canned fish, wine. Natural resources: fish, cork, tungsten, iron ore. **Exports:** cotton textiles, cork and cork products, canned fish, wine, timber and timber products, resin, machinery, appliances. **Imports:** machinery and transport equipment, petroleum, industrial machinery, agricultural products, iron and steel, chemicals. Major trading partners: Western European countries, U.S.

QATAR

State of Qatar

Location : Located in Middle East, Qatar occupies mainly the Qatar Peninsula, which projects from the west coast of the Gulf, together some offshore islands. Saudi Arabia is to the east, United Arab Emirates to the south-east. Bahrain is off the coast about 60 km to the north-west.

Area : 11,437 sq km

Population (est. 1998) : 579,000 (average annual growth rate : est. 1995-2000, 2.1%)

Capital : Doha

Largest cities : Doha; ar-Rayyan and al-Wakrah (part of the Doha agglomeration)

Principal rivers : There are no rivers

Highest point : In the Dukhan Heights, 73 m (240 ft)

Flag : Maroon, with white serrated border on hoist

Monetary unit : Qatari riyal

Language : Arabic; English is also widely spoken

Religion : Islam, 95%

Literacy rate : 79.4%

Type of Government : Traditional Monarchy

Economic summary : Gross national product (1994): \$7.0 billion. Real growth rate: -2.2%. Per capita income (1994): \$13,020. Labour force 104,000. Major industrial product: oil. Natural resources: oil, gas. **Exports:** petroleum products, steel, fertilisers. **Imports :** machinery and equipment, consumer goods, chemicals. Major trading partners: France, U.K., U.S., Japan, Germany, Brazil, South Korea, UAE.

ROMANIA

Location : Located in Eastern Europe, Romania has a coastline to the east on the Black Sea. C.I.S. is to the north, Hungary to the west, Yugoslavia to the south-west and Bulgaria to the south.

Area : 237,500 sq km

Population (est. 1998) : 22.6 million (average annual growth rate : est. 1995-2000, -0.2%)

Capital : Bucharest

Largest cities : Bucharest, Brasov, Timisoara, Constanta, Cluj-Napoca, Galati

Principal rivers : Danube (Dunaria), Mures, Prut

Highest point : Moldoveanu, 2,544 m (8,346 ft)

Flag : Three vertical stripes of blue, yellow and red.

Monetary unit : Leu

Languages : Romanian (official)

Religions : Romanian Orthodox, 86.8% Roman Catholic, 5%; Protestant, 3.5%.

Literacy rate : 97%

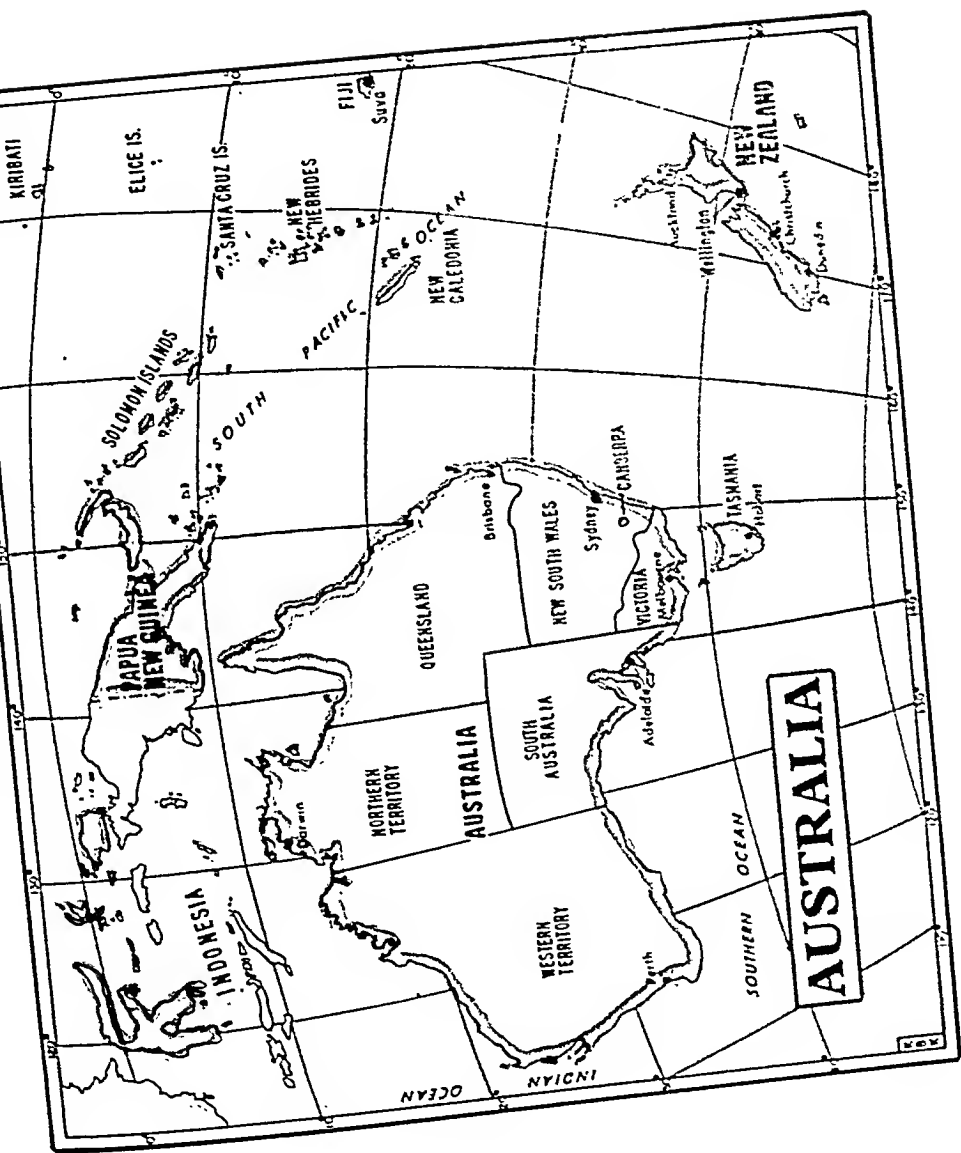
Type of Government: Democracy

Economic summary : Gross national product (1996): \$36.2 billion. Average annual growth (1995-96): 4.4%. Per capita income: \$1,600. Arable land: 43%. Principal products: corn, wheat, livestock, sunflowers, potatoes. Labour force: (1993) : 10.1 m; Industry: 31%; agriculture, 33%. Major products: steel, cement, metal production and processing, chemicals, petroleum. Natural resources: oil, timber, natural gas, coal. **Exports:** machinery, metals, chemicals, timber, furniture, textiles, foodstuffs. **Imports:** machinery, fuel, consumer goods, minerals. Major trading partners: Germany, U.S., U.K., Italy, Russia, France.

RUSSIA

Russian Federation

Location : The Russian Federation occupies 76 per cent of the total area of the former Soviet Union and is the largest republic of the Commonwealth of Independent States. It is ab



WORLD TEMPERATURES

Monthly Average °C

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Abu Dhabi	18	19	21	24	28	31	32	33	31	27	24	20
Addis Ababa	14	15	16	17	18	17	16	15	15	15	14	13
Adelaide	23	23	15	17	15	12	11	12	13	17	19	21
Aden	32	32	32	32	32	32	32	32	32	32	32	32
Amsterdam	2	2	6	9	13	16	18	18	15	11	6	3
Baghdad	10	12	15	21	28	31	34	34	30	24	18	12
Bahrain	16	16	16	24	29	31	31	34	31	28	23	18
Bangkok	25	28	29	30	29	28	28	28	28	28	26	25
Birmingham	4	4	6	9	12	15	16	16	14	10	7	5
Bombay	24	25	27	29	30	29	28	27	27	28	27	25
Brussels	6	6	9	13	18	21	23	22	19	14	8	6
Cairo	13	14	17	20	25	27	29	28	26	24	-	15
Calcutta	19	22	27	30	31	30	29	29	29	28	24	20
Chicago	-4	-3	3	9	15	20	23	22	18	12	4	-1
Dar es Salaam	27	27	27	27	25	24	23	23	23	24	25	27
Delhi	14	17	23	29	34	35	31	30	30	27	21	16
Dhahran	15	17	22	27	30	34	35	35	31	27	22	16
Dhaka	19	21	26	28	28	28	28	28	29	28	24	20
Doha	16	16	22	26	30	33	35	35	32	29	24	19
Dubai	18	19	21	24	28	31	33	33	31	27	24	20
Frankfurt	2	3	5	10	14	16	19	18	13	10	5	3
Geneva	0	1	-	-	-	15	18	18	14	9	5	1
Harare	18	18	18	28	28	28	28	28	28	28	18	18
Hong Kong	15	17	17	17	17	27	28	28	27	25	21	17
Jakarta	26	26	26	26	26	30	30	30	26	26	26	26
Jeddah	24	24	24	24	29	30	32	32	31	29	27	25
Karachi	19	20	24	26	29	30	29	27	27	27	24	20
Kathmandu	-	-	25	28	30	30	29	28	28	27	23	19
Kuala Lumpur	27	28	28	28	28	28	27	28	28	27	27	27
Kuwait	19	19	19	25	30	35	36	37	33	27	20	15
Lagos	30	30	30	30	30	30	30	30	30	30	30	30
London	4	4	6	9	12	15	18	17	14	14	6	5
Los Angeles	12	12	14	15	16	18	19	20	19	18	15	13
Lyons	11	11	11	20	18	16	16	18	21	24	23	21
Madras	25	26	28	31	33	33	31	31	30	28	26	25
Managua	26	26	25	24	22	20	20	20	21	22	24	25
Mexico City	12	13	16	17	18	17	16	16	15	15	13	12
Montreal	-9	-9	-4	5	13	18	21	20	15	10	3	-7
Moscow	-9	-8	-4	4	13	17	19	17	11	4	-3	-8
Munich	-1	-1	5	10	16	16	18	16	15	11	1	-1
Muscat	22	23	24	30	33	35	34	33	31	31	24	22
Nairobi	20	21	21	20	19	18	16	17	19	20	20	19
New York City	0	0	4	10	15	20	23	23	19	13	7	3
Paris	4	5	7	10	14	17	21	20	16	12	7	5
Perth (W.A.)	23	23	21	19	16	14	13	14	16	19	21	22
Ras Al Khaimah	27	27	28	32	35	41	42	40	37	31	26	26
Rome	7	8	11	13	18	21	24	24	20	16	12	8
San Francisco	13	15	16	17	17	19	18	18	21	20	17	14
Sann'a	15	16	18	19	20	22	22	22	19	17	12	13
Seychelles	27	27	27	27	27	27	26	26	26	26	27	26
Sharjah	18	19	23	25	28	31	34	34	31	28	24	20
Singapore	27	27	27	28	27	28	28	27	27	27	27	27
Sydney	22	22	21	18	15	13	12	13	15	17	19	21
Tehran	3	5	10	15	21	26	29	25	18	12	5	4
Tokyo	4	4	6	13	16	21	25	26	22	16	11	6
Washington DC	2	2	6	12	18	23	26	24	20	14	8	3
Zurich	0	3	5	8	14	18	20	18	14	10	4	0

Monetary unit : East Caribbean dollar
Literacy rate : 97%
Type of Government : Constitutional monarchy
Member of Commonwealth of Nations
Economic summary : Gross domestic product (1994): \$173 million. Real growth rate: 6.1%. Per capita income: \$4,217. Arable land: 22%. Principal agricultural products: sugar, cotton. Labour force: 20,000 (1981). Major industries: tourism, sugar processing, salt extraction. **Exports:** sugar, molasses, postage stamps. **Imports:** foodstuffs, manufactured goods, machinery, fuels. Major trading partners: U.S., U.K., Japan, Trinidad and Tobago, Canada.

ST. LUCIA

Location : St. Lucia is one of the Windward Islands located in Eastern Caribbean Sea. Martinique is located to its north and St. Vincent to its south.

Area : 617 sq km
Population (est. mid-1997) : 150,630 (average annual growth rate: 1.14%)
Capital : Castries
Largest cities : Castries, Vieux Fort
Principal rivers : There are no significant rivers.

Highest point : Mount Gimie, 959 m (3,145 ft)
Flag : Blue with a design of a black triangle edged in white, bearing a smaller yellow triangle, in the centre

Monetary unit : East Caribbean dollar
Languages : English and Patois
Religion : Roman Catholic, 82%; Protestant, 7%; Anglican, 3%
Literacy rate : 67%

Type of Government : Parliamentary Democracy
Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$425 million. Real growth rate: 4.9%. Per capita income: \$3,014. Arable land: 8%. Principal agricultural products: bananas, coconuts, sugar, cocoa, spices. Major industrial products: clothing, assembled electronics, beverages. **Exports:** bananas, clothing, cocoa, vegetables, fruits, coconut oil. **Imports:** foodstuffs, machinery and equipment, fertilisers, petroleum products. Major trading partners: U.K., U.S., Caribbean countries, Japan, Canada.

ST. VINCENT AND THE GRENADINES

Location : St. Vincent is a part of the Windward Islands in the Eastern Caribbean Sea. St. Lucia is located to the north and Grenada to the south.

The northern part of the Grenadines is included in the State of St. Vincent, the southern being part of Grenada.

Area : 388 sq km
Population (est. mid-1997) : 119,092 (average annual growth rate: 0.62%)
Capital and largest city : Kingstown
Principal rivers : There are no significant rivers

Highest point : Mount Soufriere, an active volcano, 1,234 ft (4,048 ft)

Flag : Three vertical stripes of blue, yellow and green, with the yellow of double width and charged with three green diamonds

Monetary unit : East Caribbean dollar
Language: English, some French Patois
Religion : Anglican, 42%; Methodist, 21%; Roman Catholic, 12%
Literacy rate : 96%

Type of Government : Constitutional monarchy
Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$250 million. Real growth rate: 2.5%. Per capita income: \$2,248. Arable land: 38%. Principal agricultural products: bananas, arrowroot, coconuts. Labour force: 67,000 (1984). Major industry: food processing. **Exports:** bananas, arrowroot, copra, tennis racquets. **Imports:** foodstuffs, machinery and equipment, chemicals, fuels, minerals. Major trading partners: U.K. U.S., Caribbean nations.

SAN MARINO

Most Serene Republic of San Marino

Location : A landlocked country, San Marino is located in Central Italy. It is located 23 km inland from Rimini, on the Adriatic Sea and is completely enclosed by Italy.

Area : 62 sq km
Population (est. mid-1997) : 24,714 (average annual growth rate: 0.76%)

Capital and largest city : San Marino
Other major cities : Seravalle, Borgo Maggiore (part of San Marino city)

Principal rivers : There are no significant rivers.

Highest point : Monte Titano, 739 m (2,424 ft)
Flag : Horizontally white over light blue, with the national arms overall in the centre

Monetary unit : Italian lira
Language : Italian
Religion : Roman Catholic
Literacy rate : 96%
Type of Government : Republic
National name : Repubblica di San Marino

Economic summary : Gross national product (1994): \$430 million. Real growth rate: 3.1%. Per capita income: \$17,213. Arable land : 17%. Principal agricultural products: wheat and other grains, grapes, olive, cheese. Labour force: 4,300. Major Industrial products: textiles, paper, leather, wine, olive oil. **Exports:** building stone, lime, chestnuts, wheat, hides, baked goods. **Imports:** manufactured consumer goods. Major trading partner: Italy.

SAO TOME AND PRINCIPE

Democratic Republic of Sao Tome and Principe

Location: West Africa. The archipelago, consisting of the main islands of Sao Tome and Principe, lies in the Gulf of Guinea, 200 km west of the coast of Gabon.

Area : 958 sq km

Population (est. mid-1997) : 147,865 (average annual growth rate: 2.5%)

Capital and largest city : Sao Tome

Principal rivers : There are no significant rivers

Highest point : Pico Gago Coutinho (Pico de Sao Tome), 2,024 (6,640 ft)

Flag : Three horizontal stripes of green, yellow and green, with the yellow of double width and bearing two black stars. In the hoist is a red triangle overall.

Monetary unit : Dobra

Language : Portuguese

Religions : Roman Catholic, Evangelical

Protestant, Seventh-Day Adventist

Literacy rate : 57.4%

Type of Government : Republic

Economic summary : Gross domestic product (1994): \$16 million. Average annual growth rate: -23.8%. Per capita Income (1994) \$8,120. Arable land: 1%. Principal agricultural products: cocoa, copra, coconuts, palm oil, coffee, bananas. Labour force (1987): 31,900, mostly in agriculture. Major Industrial products: timber, copra. **Exports:** cocoa, coffee, copra, palm oil. **Imports:** foodstuffs, textiles, machinery, electrical equipment, fuels, lubricants. **Major trading partners:** Netherlands, Portugal, Germany, China.

SAUDI ARABIA

Kingdom of Saudi Arabia

Location : Located in Middle East, Saudi Arabia occupies the main centre of the Arabian peninsula, with the Red Sea to the west and the Gulf to the east. Jordan, Iraq and Kuwait are to the north, Bahrain, Qatar and United Arab Emirates and

Oman to the east. South Yemen and North Yemen to the south.

Area : 2,250,070 sq km

Population (est. 1998) : 20.2 million (growth rate : est. 1995-2000, 3.4%)

Capital : Riyadh

Largest cities : Jeddah, Riyadh, Makka (Mecca), Dammam, Medina, Taif, Buraidah, Abha

Principal rivers : There are no permanent streams

Highest point : Jebel Razikh, 3,658 m (12,002 ft)

Flag : Green with the text 'There is no God but Allah and Mohammed is his prophet' in white Arabic script. Beneath this is a white sabre.

Monetary unit : Riyal

Language : Arabic, English widely spoken

Religion : Islam, 100%

Literacy rate : 62.8%

Type of Government : Monarchy with council of ministers

National name : Al-Mamlaka al-'Arabiya as-Saudiya

Economic summary : Gross national product (1994): \$121.8 billion. Average annual growth (1993-94): 0.2%. Per capita income (1994): 6,977. Arable land: 5%. Principal agricultural products: wheat, dates, grains, livestock, 5,000,000; about 45% are for government service, 34%; in industry, 28%. Major industrial products: petroleum products, steel, packaged petroleum and petroleum products. **Imports:** manufactured goods, equipment, construction materials, etc. **Major trading partners:** U.S., China, Britain and other Western European countries, Japan, South Korea, Taiwan.

SENEGAL

Republic of Senegal

Location : West Africa. Senegal has a coastline on the Atlantic Ocean. Mauritania is to its north, Mali to its east and Guinea and Guinea-Bissau to its south. Gambia forms an enclave within Senegal.

Area : 196,722 sq km

Population (est. 1998) : 9.0 million (average annual growth rate : est. 1995-2000, 2.7%)

Capital and largest city : Dakar

Other major cities : Thies, Kaolack, Ziguinchor, St. Louis

Principal rivers : Senegal, Gambia, Casamance

Highest point : Mont Gounou, 1,515 m (4,970 ft)

Flag : Three vertical stripes of green, yellow and red, with a green star in the centre

Monetary unit : East Caribbean dollar
Literacy rate : 97%
Type of Government : Constitutional monarchy
Member of Commonwealth of Nations
Economic summary : Gross domestic product (1994): \$173 million. Real growth rate: 6.1%. Per capita income: \$4,217. Arable land: 22%. Principal agricultural products: sugar, cotton. Labour force: 20,000 (1981). Major industries: tourism, sugar processing, salt extraction. Exports: sugar, molasses, postage stamps. Imports: foodstuffs, manufactured goods, machinery, fuels. Major trading partners: U.S., U.K., Japan, Trinidad and Tobago, Canada.

ST. LUCIA

Location : St. Lucia is one of the Windward Islands located in Eastern Caribbean Sea. Martinique is located to its north and St. Vincent to its south.

Area : 617 sq km
Population (est. mid-1997) : 150,630 (average annual growth rate: 1.14%)
Capital : Castries
Largest cities : Castries, Vieux Fort
Principal rivers : There are no significant rivers.

Highest point : Mount Gimie, 959 m (3,145 ft)
Flag : Blue with a design of a black triangle edged in white, bearing a smaller yellow triangle, in the centre

Monetary unit : East Caribbean dollar
Languages : English and Patois
Religion : Roman Catholic, 82%; Protestant, 7%; Anglican, 3%
Literacy rate : 67%

Type of Government : Parliamentary Democracy
Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$425 million. Real growth rate: 4.9%. Per capita income: \$3,014. Arable land: 8%. Principal agricultural products: bananas, coconuts, sugar, cocoa, spices. Major industrial products: clothing, assembled electronics, beverages. Exports: bananas, clothing, cocoa, vegetables, fruits, coconut oil. Imports: foodstuffs, machinery and equipment, fertilisers, petroleum products. Major trading partners: U.K., U.S., Caribbean countries, Japan, Canada.

ST. VINCENT AND THE GRENADINES

Location : St. Vincent is a part of the Windward Islands in the Eastern Caribbean Sea. St. Lucia is located to the north and Grenada to the south.

The northern part of the Grenadines is included in the State of St. Vincent, the southern being part of Grenada.

Area : 388 sq km
Population (est. mid-1997) : 119,092 (average annual growth rate: 0.62%)
Capital and largest city : Kingstown
Principal rivers : There are no significant rivers

Highest point : Mount Soufriere, an active volcano, 1,234 ft (4,048 ft)

Flag : Three vertical stripes of blue, yellow and green, with the yellow of double width and charged with three green diamonds

Monetary unit : East Caribbean dollar
Language : English, some French Patois
Religion : Anglican, 42%; Methodist, 21%; Roman Catholic, 12%
Literacy rate : 96%

Type of Government : Constitutional monarchy
Member of Commonwealth of Nations
Economic summary : Gross domestic product (1994): \$250 million. Real growth rate: 2.5%. Per capita income: \$2,248. Arable land: 38%. Principal agricultural products: bananas, arrowroot, coconuts. Labour force : 67,000 (1984). Major industry: food processing. Exports: bananas, arrowroot, copra, tennis racquets. Imports: foodstuffs, machinery and equipment, chemicals, fuels, minerals. Major trading partners: U.K., U.S., Caribbean nations.

SAN MARINO

Most Serene Republic of San Marino

Location : A landlocked country, San Marino is located in Central Italy. It is located 23 km inland from Rimini, on the Adriatic Sea and is completely enclosed by Italy.

Area : 62 sq km
Population (est. mid-1997) : 24,714 (average annual growth rate : 0.76%)
Capital and largest city : San Marino
Other major cities : Seravalle, Borgo Maggiore (part of San Marino city)

Principal rivers : There are no significant rivers.

Highest point : Monte Titano, 739 m (2,424 ft)
Flag : Horizontally white over light blue, with the national arms overall in the centre

Monetary unit : Italian lira
Language : Italian
Religion : Roman Catholic
Literacy rate : 96%
Type of Government : Republic
National name : Repubblica di San Marino

Capital : Singapore
 Highest point : Sungai Seletar
 Flag : Horizontally red over white, charged in the upper left canton with a crescent and a circle of five stars, all in white
 Monetary unit : Singapore dollar
 Languages : Malay, Chinese (Mandarin), Tamil, English
 Religion : Islam, Christian, Buddhist, Hindu, Taoist

Literacy rate : 91% (1995)
 Type of Government : Republic
 Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$93.0 billion. Average annual growth (1995-96): 7.6%. Per capita income: \$30,550. Arable land: 4%. Principal agricultural products: poultry, rubber, copra, vegetables, fruits. Labour force (1994): 1,649,300; financial, business, other services 30.2%; manufacturing 28.4%; commerce, 22%. Major industries: petroleum refining, oil exploration, ship repair, electronics and other light industry. Exports: electrical machinery, electronics, rubber, computers and computer peripherals, petroleum products. Imports: aircraft, chemicals, foodstuff, manufactured goods, petroleum. Major trading partners: U.S., Japan, Malaysia, Hong Kong, Japan, Thailand, Taiwan.

SLOVAKIA

Republic of Slovakia
 Republic of Slovakia dissolved
 Czech and Slovak Federal Republic and
 Independent states on January 1, 1993.
 : Slovakia is now an independent entity.
 : Czech Republic, north by Poland,
 : Ukraine, south by Hungary and south-
 : 49,000 sq km
 : (est. 1998) : 5.4 million (average
 : Annual increase : est. 1995-2000,
 : 0.5%

Major cities : Bratislava, Banská, Bystrica, Žilina,
 Prešov, Martin
 Košice, Vah, Hron
 Oravica, 2,655 m
 : Stripes of white, blue
 : All three-tenths of the

YEAR BOOK 2000

Languages : Slovak (official)
 Religion : Roman Catholic, Protestant, Orthodox Jewish
 Literacy rate : 99%
 Type of Government : Republic

National name : Slovenska Republika
 Economic summary : Gross national product (1996): \$18.2 billion. Average annual growth (1995-96): 6.6%. Per capita income: \$10,000. Important industries: iron and non-ferrous metal processing, ship-building, construction, appliances and leather goods. Labour force 2,166,000. Land in use: 37%. Major agricultural products: grains, potatoes, sugar beets, fruit, vegetables, forestry. Exports: machinery and transport equipment, chemicals, fuels, minerals, metals, agricultural products. Imports: machinery, transport equipment, fuels and lubricants, raw materials, chemicals, agricultural products. Major trading partners : Czech Republic, C.I.S. republics, Germany, Poland, Austria, Hungary, Italy, France, U.S., U.K., Switzerland.

SLOVENIA

Republic of Slovenia
 Location : Slovenia is bounded in the north by Austria, in the north-east by Hungary, in the south-east by Croatia and in the west by Italy and the Adriatic Sea. There is a small strip of coast south of Trieste. It is largely a mountainous republic and about half of the land is forested with hilly plains spread across the central and eastern regions.
 Area : 20,251 sq km
 Population (est. 1998) : 1.9 million (average annual rate of natural increase : est. 1995-2000, -0.1%)

Capital : Ljubljana
 Largest cities : Maribor, Kranj, Celje, Nova Gorica, Novo Mesto.
 Principal rivers : Drava, Sava, Mura
 Highest point : Triglav, 2,864 m (9,396 ft)
 Flag : Three horizontal stripes of white, blue and red, with the arms overall in the canton
 Monetary unit : Tolar
 Languages : Slovenian, most can also speak Serbo-Croatian
 Religion : Predominantly Roman Catholic
 Literacy rate : 96%
 Type of Government : Republic

National name : Republika Slovenija
 Economic summary : Gross national product (1996): \$18.4 billion. Average annual growth (1995-96): 3.2%. Per capita income: \$9,240. Agricultural products: corn, rye, oats, potatoes, fruit, livestock raising forestry. Manufactured

Monetary unit : Franc CFA
Ethnic groups : Wolofs, Sereres, Peuls, Tukulers and others
Languages : French (official); Wolof, Serer, other ethnic dialects
Religion : Islam, 92%; indigenous, 6%; Christian, 2%
Literacy rate : 33.1%
Type of Government : Republic
National name : Republique du Senegal
Economic summary : Gross national product (1996): \$4.9 billion. Average annual growth (1995-96): 5.9%. Per capita income: \$570. Arable land: 27%. Principal products: peanuts, millet, corn, rice, sorghum. Labour force: 2,509,000; in agriculture : 77%. Major products: peanut oil, fertiliser, cement, processed food and fish. Natural resources: fish, phosphate. Exports: peanuts, phosphate rock, canned fish. Imports: foodstuffs, consumer goods, machinery, transport equipment. Major trading partners: U.S., Western European countries, African neighbours, Japan, China, India.

SEYCHELLES

Republic of Seychelles

Location : Seychelles is a group of about 100 islands scattered in the Western Indian Ocean. The main island, Mahe, is located 1,800 km east of Mombasa (Kenya) and 1,090 km north of the island of Madagascar.

Area : 455 sq km

Population (est. mid-1997) : 78,107 (average growth rate: 0.7%)

Capital : Victoria

Principal rivers : There are no significant rivers

Highest point : Mome Seychellois, 906 m (2,972 ft) on the island Mahe

Flag : Divided horizontally red over green by a wavy white stripe, with red of double width

Monetary unit : Seychelles Rupee

Languages : English and French (official), Creole

Religion : Roman Catholic, 92%; Anglican, 6%

Literacy rate : 58%

Type of Government : Republic

Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$496 million. Real growth rate: 11.9%. Per capita income: \$6,798. Arable land: 4%. Principal agricultural products: vanilla, copra, cinnamon. Labour force: 27,700; in industry and commerce: 31%. Major industrial products: processed copra and vanilla, coconut oil. Exports: cinnamon, vanilla, copra. Imports: food, tobacco, manufactured goods, machinery, petroleum

products, textiles, transport equipment. Major trading partners: U.K., France, Japan, Pakistan, Reunion, South Africa.

SIERRA LEONE

Republic of Sierra Leone

Location : West Africa. Sierra Leone has a coastline on the Atlantic Ocean. Guinea is located to the north and Liberia to the south.

Area : 71,740 sq km

Population (est. 1998) : 4.6 million (average annual growth rate : est. 1995-2000, 3.0%)

Capital and largest city : Freetown

Principal rivers : Siwa, Jong, Rokel

Highest point : Bintimani Peak, 1,948 m (6,390 ft)

Flag : Three horizontal stripes of green, white and blue

Monetary unit : Leone

Languages : English (official), Mende, Temne, Krio

Religion : Islam, 30%; indigenous, 30%; Christian, 10%; other 30%

Literacy rate : 31.4% (1995)

Type of Government : Military

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$0.9 billion. Average annual growth (1995-96): 10.4%. Per capita income: \$200. Arable land : 25%. Principal agricultural products: coffee, cocoa, palm kernels, rice. Labour force: 1,369,000; agriculture: 65%; industry: 19%. Major industrial products: diamonds, bauxite, beverages, cigarettes, rutile, construction goods. Natural resources: diamonds, bauxite, iron ore. Exports: diamonds, rutile iron ore, palm kernels, cocoa, coffee. Imports: food, petroleum products, chemicals, capital goods. Major trading partners: U.K., U.S., Western European countries, Japan, China, Nigeria.

SINGAPORE

Republic of Singapore

Location : Located in South-east Asia, the island of Singapore is at the southern end of the Malay peninsula, with Malaysia to the north, separated by the Straits of Johore, about 1 km wide. There is a causeway across these Straits linking the island with the peninsula. The islands which are part of Indonesia are several kilometres to the south.

Area : 641.4 sq km

Population (est. 1998) : 3.5 million (average annual growth rate : est. 1995-2000, 1.5%)

Capital : Singapore
Principal river : Sungai Selat
Highest point : Bukit Timah, 177 m (581 ft)
Flag : Horizontally red over white, charged in the upper left canton with a crescent and a circle of five stars, all in white
Monetary unit : Singapore dollar
Languages : Malay, Chinese (Mandarin), Tamil, English
Religion : Islam, Christian, Buddhist, Hindu, Taoist

Literacy rate : 91% (1995)
Type of Government : Republic

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$93.0 billion. Average annual growth (1995-96): 7.6%. Per capita income: \$30,550. Arable land: 4%. Principal agricultural products: poultry, rubber, copra, vegetables, fruits. Labour force (1994): 1,649,300; financial, business, other services 30.2%; manufacturing 28.4%; commerce, 22%. Major industries: petroleum refining, oil exploration, ship repair, electronics and other light industry. Exports: electrical machinery, electronics, rubber, computers and computer peripherals, petroleum products. Imports: aircraft, chemicals, foodstuffs, manufactured goods, petroleum. Major trading partners: U.S., Japan, Malaysia, Hong Kong, Japan, Thailand, Taiwan.

SLOVAKIA

Republic of Slovakia

Slovakia and The Czech Republic dissolved the Czech and Slovak Federal Republic and became independent states on January 1, 1993. The Czech Republic is now an independent entity.

Location : Slovakia is bounded in the north-west by the Czech Republic, north by Poland, east by the Ukraine, south by Hungary and south-west by Austria.

Area : 49,035 sq km

Population (est. 1998) : 5.4 million (average annual rate of natural increase : est. 1995-2000, 0.1%)

Capital : Bratislava

Largest cities : Banska, Bystrica, Zilina, Trnava, Kosice, Nitra, Presov, Martin

Principal rivers : Danube, Vah, Hron

Highest point : Gerlachovka, 2,655 m (8,737 ft)

Flag : Three horizontal stripes of white, blue and red, with the arms overall three-tenths of the distance from the hoist

Monetary unit : Koruna

Languages : Slovak (official), Hungarian
Religion : Roman Catholic major; other religions: Protestant, Orthodox Jewish

Literacy rate : 99%

Type of Government : Republic

National name : Slovenska Republika

Economic summary : Gross national product (1996): \$18.2 billion. Average annual growth (1995-96): 6.6%. Per capita income: \$3,410. Important industries: Iron and non-ferrous mining, metal processing ship-building, consumer appliances and leather goods. Labour force : 2,166,000. Land in use: 37%. Major agricultural products: grains, potatoes, sugar beets, fruit, vegetables, forestry. Exports: machinery and transport equipment, chemicals, fuels, minerals, metals, agricultural products. Imports: machinery, transport equipment, fuels and lubricants, raw materials, chemicals, agricultural products. Major trading partners : Czech Republic, C.I.S. republics, Germany, Poland, Austria, Hungary, Italy, France, U.S., U.K., Switzerland.

SLOVENIA

Republic of Slovenia

Location : Slovenia is bounded in the north by Austria, in the north-east by Hungary, in the south-east by Croatia and in the west by Italy and the Adriatic Sea. There is a small strip of coast south of Trieste. It is largely a mountainous republic and about half of the land is forested, with hilly plains spread across the central and eastern regions.

Area : 20,251 sq km

Population (est. 1998) : 1.9 million (average annual rate of natural increase : est. 1995-2000, -0.1%)

Capital : Ljubljana

Largest cities : Maribor, Kranj, Celje, Nova Gorica, Novo Mesto.

Principal rivers : Drava, Sava, Mura

Highest point : Triglav, 2,864 m (9,396 ft)

Flag : Three horizontal stripes of white, blue and red, with the arms overall in the canton

Monetary unit : Tolar

Languages : Slovenian, most can also speak Serbo-Croatian

Religion : Predominantly Roman Catholic

Literacy rate : 96%

Type of Government : Republic

National name : Republika Slovenija

Economic summary : Gross national product (1996): \$18.4 billion. Average annual growth (1995-96): 3.2%. Per capita income: \$9,240. Agricultural products: corn, rye, oats, potatoes, fruit, livestock raising forestry. Manufactured

products: automobiles, iron and steel, cement, chemicals, textiles, furniture, electrical machinery, pharmaceuticals, Mineral resources : coal, oil, mercury. **Exports:** machinery, transport equipment, chemicals. **Imports:** chemicals, fuels and lubricants.

SOLOMON ISLANDS

Location : Located in south-west Pacific Ocean, the country comprises 15 main islands (including Guadalcanal, Santa Isabel, Malaita, San Cristobal) and numerous small islands of the Southern Solomons; Bougainville (Northern Solomons, Papua New Guinea) is to the north-west and Vanuatu to the south-east.

Area : 29,785 sq km

Population (est. 1998) : 417,000 (average annual growth rate : est. 1995-2000, 3.3%)

Capital and largest city : Honiara (on Guadalcanal)

Principal rivers : There are no significant rivers.

Highest point : Mount Makarakomburu, 2,447 m (8,028 ft)

Flag : Divided blue over green by a diagonal yellow band. In the canton there are five white stars.

Monetary unit : Solomon Islands dollar

Languages : English, Pidgin, 80 other languages and dialects.

Religion : Anglican, Roman Catholic, South Seas Evangelical, Seventh-Day Adventist, United (Methodist) Church, other Protestant

Literacy rate : 60%

Type of Government : Parliamentary democracy in the Commonwealth of Nations.

Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$245 billion. Real growth rate: 10.4%. Per capita income (1994): \$669. Arable land: 1%. Principal agricultural products : copra, palm oil, rice, cocoa, yams, pigs. Labour force (1994) : 23,448; in agriculture, forestry, fishing, 32.4%; in services, 25%. Major industrial products: processed fish, copra. Natural resources: fish, timber, gold, bauxite. Exports: Fish, timber, copra, palm oil. Imports: machinery and transport equipment, foodstuffs, fuel, manufactured goods. Major trading partners: Japan, Australia, U.K., EEC, Thailand, Singapore, Netherlands, Hong Kong, China.

SOMALIA

Somali Democratic Republic

Location : North-east Africa. Somalia's coastline extends from the Indian Ocean around Cape

Guardfui into the Gulf of Aden, with Djibouti to the north-west, Ethiopia to the west and Kenya to the south-west.

Area : 637,657 sq km

Population (est. 1998) : 10.7 million (average annual growth rate : est. 1995-2000, 3.9%)

Capital and largest city : Mogadishu

Other major cities : Hargeisa, Baldo, Burao

Principal rivers : Juba, Shebelle

Highest point : Surud Ad, 2,408 m (7,900 ft)

Flag : Light blue with a white star in the centre

Monetary unit : Somali Shilling

Languages : Somali (official) Arabic, English, Italian

Religion : Islam (Sunni)

Literacy rate : 24%

Type of Government : Independent Republic

National name : Al Jumhuriya As-Somaliya al-Dimocradia

Economic summary : Political turmoil in 1991-92 resulted in widespread famine and a substantial drop in economic output. Gross domestic product (1994): \$1.13 billion. Real growth rate: 2%; Per capita income: \$124. Arable land: 2%. Principal products: livestock, bananas, sorghum, cereals, sugarcane, cotton, maize. Labour force: 2,200,000. Major products: flour, meat, fish, canned fruit juices. Natural resources: timber, uranium. Exports: livestock, skins and hides, bananas. Imports: textiles, construction materials and equipment, machinery, manufactured goods, transport equipment. Major trading partners: Saudi Arabia, Italy, U.S., U.K., Germany, Italy.

SOUTH AFRICA

Republic of South Africa

Location : South Africa. The country forms the southern part of Africa with a coastline on the Atlantic and Indian Oceans. The northern border is formed by Mozambique, Swaziland, Zimbabwe, Botswana and South-West Africa. Lesotho is completely encircled within South Africa. Walvisbaai is an enclave in South-West Africa.

Area : 1,224,691 sq km

Population (est. 1998) : 44.3 million (average annual growth rate : est. 1995-2000, 2.2%)

Administrative capital : Pretoria

Legislative capital : Cape Town

Judicial capital : Bloemfontein

Largest Metropolitan areas : Cape Peninsula (Cape Town and surrounding), Johannesburg/Randburg, East Rand (Springs, Germiston and surroundings), Durban/Pinetown/Inanda, Pretoria/Wonderboom/Shoshanguve.

Principal rivers : Orange (Oranje), Limpopo, Vaal

Highest point : Injasuti, 3,048' m (11,182 ft)

Flag : Multicoloured — black, yellow, green, white, blue and red.

Monetary unit : Rand

Languages : English, Afrikaans, Isindebele, Sotho sa, Leboa, Sesotho, Siswati, Xitsonga, Setsawa, Tshivenda, Isixhosa and Isizulu are the official languages of the interim period, Xhosa, Zulu, other African languages

Religion : Christian, Hindu, Islam

Literacy rate : 82%

Type of Government : Federal republic with bicameral Parliament and universal suffrage.

National name : Republic of South Africa

Economic summary : Gross national product (1996): \$132.5 billion. Average annual growth (1995-96): 2.9%. Per capita income: \$3,520. Arable land: 11.59%. Principal agricultural products: corn, wool, wheat, sugarcane, tobacco, fruits. Labour force: 11,000,000; in agriculture, 30%, in industry and commerce: 29%; in service, 34%. Major products: assembled automobiles, machinery, textiles, iron and steel, chemicals, fertiliser, fish. Natural resources: gold, diamonds, platinum, uranium, coal, iron ore, phosphates, manganese. Exports: gold, diamonds, minerals and metals, food, chemicals. Imports: motor vehicle parts, machinery, metals, scientific instruments, chemicals, textiles. Major trading partners: U.S., Germany, other EC countries, Hong Kong, Japan, U.K., Italy.

SPAIN

Kingdom of Spain

Location : Located in South-west Europe, Spain occupies the main part of the Iberian peninsula. It has coastlines to the west on the Atlantic Ocean, north on the Bay of Biscay and south and east on the Mediterranean Sea. France is located to its north and Portugal to its west. The country includes the Balearic and Canary Islands and Spanish areas of North Africa (Ceuta, Melilla, Alhucemas, Chafarinas islands and Penon de Velez).

Area : 504,750 sq km

Population (est. 1998) : 39.8 million (average annual growth rate : est. 1995-2000, 0.1%)

Capital : Madrid

Largest cities : Madrid, Barcelona, Valencia, Seville, Zaragoza, Vizcaya (Bilbao)

Other major cities : Malaga, Las Palmas de Gran Canaria, Valladolid, Murcia, Cordoba, Palma de Mallorca, Granada, Vigo, Alicante, Gijon,

La Coruna, Cadiz, Victoria, Badolona, Oviedo, Santander

Principal rivers : Tagus (Tajo), Ebro, Douro (Duero), Guadiana, Guadalquivir

Highest point : Pico del Tiede, 3,716 m (12,192 ft)

Flag : Three horizontal stripes of red, yellow and red, with the yellow of double width and charged near the hoist with the national arms

Monetary unit : Peseta

Languages : Spanish, Basque, Catalan, Galician

Religion : Roman Catholic, 99%

Literacy rate : 95%

Type of Government : Constitutional monarchy

National name : Reino de Espana

Economic summary : Gross national product (1996): \$563.2 billion. Average annual growth (1995-96): 1.7%. Per capita income: \$14,350. Arable land: 31%. Principal products: cereals, vegetables, citrus fruits, wine, olives and olive oil, livestock. Labour force (1995) : 15.5 m.; in service, 53%; in industry: 24%. Major industrial products: processed foods, textiles, footwear, petro-chemicals, steel, automobiles ships. Natural resources: coal, lignite, water power, uranium, mercury, pyrites, fluorospar, gypsum, iron ore, zinc, lead, tungsten, copper. Exports: fresh fruits, cars and trucks, Semi-finished manufactured foods, food stuffs, machinery, electrical equipment. Imports: machinery and transportation equipment, chemicals, petroleum, automobiles, machinery, iron, steel. Major trading partners: Germany, France, Italy, U.S., U.K.

SRI LANKA

Democratic Socialist Republic of Sri Lanka

Location : Located in South Asia, the Island of Sri Lanka is off the south-east coast of India separated by the Palk Strait

Area : 65,610 sq km

Population (est. 1998) : 18.5 million (average annual growth rate : est. 1995-2000, 1.2%)

Capital : Sri Jayewardenepura Kotte

Largest cities : Sri Jayewardenepura Kotte (Colombo), Kandy, Jaffna, Galle,

Principal rivers : Mahaweli Ganga, Ganga

Highest point : Pidurutalagala (8,292 ft)

Flag : A yellow field bearing hoist two vertical stripes of the fly, dark red with a gold border and in each corner a gold

Monetary unit : Sri Lanka

Languages : Sinhala, Tamil, English
Religion : Buddhist, 73%; Hindu, 15%; Christian, 5%; Islam, 7%

Literacy rate : 90%

Type of Government : Republic

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$13.5 billion. Average annual growth (1995-96): 1.6%. Per capita income: \$740. Arable land: 16%. Principal agricultural products: tea, coconuts, rubber, rice, spices, cotton, oil seeds, wheat, millet, sheep. Labour force: 6,600,000; in mining and manufacturing: 13.3%. Major products: processed rubber tea, coconuts, textiles, cement, refined petroleum. Natural resources: limestone, graphite, gems. Exports: petroleum products, gems and jewellery, tea, rubber. Imports: petroleum, machinery, transport equipment, sugar, fertiliser. Major trading partners: Saudi Arabia, U.S., U.K., Germany, Japan, Singapore, India, Iran, Taiwan, Belgium, Hongkong, China.

SUDAN

Republic of the Sudan

Location : North-east Africa. Sudan has a coastline on the Red Sea. Egypt is to its north, Libya, Chad and Central African Republic to its west, Zaire, Uganda and Kenya to its south and Ethiopia to the east. The north, except for the Nile valley, is part of the Sahara desert.

Area : 2,505,813 sq km

Population (est. 1998) : 28.5 million (average annual growth rate : est. 1995-2000, 2.2%)

Capital : Khartoum

Largest cities : Khartoum, Omdurman, Port Sudan, Wadi Medani, El Obeld

Principal rivers : Nile (Nil), Nilel Azraq (Blue Nile), Nil el Abiyad (White Nile)

Highest point : Kinyeti, 3,187 m (10,456 ft)

Flag : Three horizontal stripes of red, white and black, with a green triangle based on the hoist

Monetary unit : Sudanese pound

Languages : Arabic, English, tribal dialects

Religion : Islam, 70% (Sunni); Indigenous, 20%; Christian, 5%

Literacy rate : 46% (1995)

Type of Government : Military

National name: Jamhuryat es-Sudan

Economic summary: Gross national product (1994): \$1.68 billion. Average annual growth (1993-94): -39.8. Per capita income (1994): \$62. Arable land: 5%. Principal products: cotton, peanuts, oil seeds, gum arabic, sorghum, wheat, millet, sugarcane. Labour force: 6,500,000; in

agriculture: 80%; In industry: 10%. Major industrial products: cement, textiles, pharmaceuticals, shoes, refined petroleum, gold. Natural resources: some iron ore, copper, chrome, industrial metals. Exports: cotton, peanuts, gum arabic, sesame. Imports: petroleum products, machinery and equipment, medicines and chemicals. Major trading partners: Western Europe, Saudi Arabia, Eastern Europe, Japan, U.S.

SURINAME

Republic of Suriname

Location : Located on the north-east of South America, Suriname has a coastline on the Atlantic Ocean. Guyana (former Dutch Guiana) is located to its west, French Guiana to its east and Brazil to its south.

Area : 163,820 sq km

Population (est. 1998) : 442,000 (average annual growth rate : est. 1995-2000, 2.5%)

Capital and largest city : Paramaribo

Principal rivers : Corantijn, Nickerie, Coppename, Saramacca, Suriname, Commewijne, Maroni

Highest point : Julianatop, 1,286 m (4,218 ft)

Flag : Horizontally green, red and green, with the red of double width, with a yellow five-pointed star in centre on red bar

Monetary unit : Suriname Guilder

Languages : Dutch, Surinamese (lingua franca), English also widely spoken

Religion : Protestant, 25.2%; Roman Catholic, 22.8%; Hindu, 27.4%; Islam, 19.6%; Indigenous, about 5%

Literacy rate : 93%

Type of Government : Republic

Economic summary : Gross domestic product (1996): \$1.4 billion. Real growth rate: 3%. Per capita income: \$3,150. Land used for agriculture: 0.3%. Principal agricultural products: rice, citrus fruits, sugar, coffee. Labour force: 104,000. Major products: aluminium, alumina, processed foods, lumber, bricks, cigarettes. Natural resources: bauxite, iron ore, timber, fish, shrimp. Exports: bauxite, alumina, aluminium, rice, shrimp, lumber and wood products. Imports: capital equipment, petroleum, cotton, foodstuffs, consumer goods. Major trading partners: U.S., Trinidad, Netherlands, Norway, Germany, Brazil, U.K., Japan, Netherlands, Antilles.

SWAZILAND

Kingdom of Swaziland

Location : South-east Africa. Swaziland is a landlocked country. Mozambique is to the east and South Africa is on the other borders.

Area : 17,400 sq km

Population (est. 1998) : 931,000 (average annual growth rate : est. 1997, 3.24%)

Capital and largest city : Mbabane

Other major cities : Lobamba (Legislative and Royal Capital), Manzini

Principal rivers : Usutu, Komati, Umbuluzi, Ingwavuma

Highest point : Emlembe, 1,863 m (6,113 ft)

Flag : Horizontally five unequal stripes of blue, yellow, crimson, yellow and blue. In the centre of the crimson stripe is an African shield of black and white, behind which are two assegais and a staff, all laid horizontally.

Monetary unit : Lilangeni

Languages : English and Swazi (official)

Religion : Christian, 60%; indigenous, 40%

Literacy rate : 76.7%

Type of Government : Monarchy

Member of Commonwealth of Nations

Economic summary : Gross national product (1994): \$1.1 billion. Real growth rate: 16.5%. Per capita income: \$1,311. Arable land: 8%. Principal agricultural products: corn, livestock, sugarcane, citrus fruits, cotton, sorghum, pea nuts. Labour force: 93,496; In Industry: 14%. Major products: milled sugar, ginned cotton, processed meat and wood. Natural resources: Iron ore, asbestos, diamonds. Exports: sugar, wood pulp, iron ore, asbestos, cotton, citrus fruits. Imports: motor vehicles, fuels and lubricants, transport equipment, petroleum products, foodstuffs, chemicals. Major trading partners: South Africa, U.K., U.S.

SWEDEN

Kingdom of Sweden

Location : Located in Northern Europe, Sweden occupies the main part of the Scandinavian peninsula. It has coastlines in the north-east on the Gulf of Bothnia, south-east on the Baltic Sea and west on the Kattegat. Norway is located to the west, Finland to the north-east and Denmark across The Sound to the south-west.

Area : 449,964 sq km

Population (1998) : 8.9 million (average annual growth rate : est. 1995-2000, 0.3%)

Capital : Stockholm

Largest cities : Stockholm, Goteborg, Malmo, Uppsala, Linkoping, Orebro, Norrkoping, Vasteras, Jonkoping, Helsingborg, Boras, Sundsvall, Umea, Lund

Principal rivers : Ume, Torne, Angermar, Klar, Dal

Highest point : Kebnekaise, 2,123 m (6,965 ft)

Flag : Blue with a yellow Scandinavian cross

Monetary unit : Krona

Language : Swedish

Religion : Evangelical Lutheran, 93.5%; Roman Catholic, 1%; others, 5.5%

Literacy rate (1985) : 99%

Type of Government : Constitutional monarchy

National name : Konungariket Sverige

Economic summary : Gross national product (1996): \$227.3 billion. Average annual growth (1995-96): 1.0%. Per capita income: \$25,710. Arable land: 7%. Principal agricultural products: dairy products, grains, sugar beets, potatoes. Labour force 4.27 m (1994); in government service: 37.4%; in mining manufacturing, electricity and water service; 23.1%; in private service: 22.2%. Major products: iron and steel, precision equipment, wood pulp and paper products, automobiles. Natural resources: forests, iron ore, hydroelectric power, zinc, uranium. Exports: wood pulp, paper products, iron ore, machinery, motor vehicles, chemicals, petroleum and petroleum products, iron and steel products. Imports: machinery, iron and steel, petroleum, clothings, foodstuffs. Major trading partners: Norway, Germany, Denmark, U.S., U.K.

SWITZERLAND

Swiss Confederation

Location : Central Europe. West Germany is to the north, France to the west, Italy to the south and Austria to the east.

Area : 41,129 sq km

Population (est. 1998) : 7.3 million (average annual growth rate : est. 1995-2000, 0.7%)

Capital : Bern

Largest cities : Zurich, Basel, Geneva, Bern, Lausanne, Lucerne (Luzern), St. Gallen, Winterthur, Biel/Bienne, Thun, Lugano

Principal rivers : Rhine (Rhein), Rhone, Aare, Inn, Ticino

Highest point : Dufourspitze (Monte Rosa), 4,634 m (15,203 ft)

Flag : Red with a white couped cross

Monetary unit : Swiss franc

Languages : German, 65%; French, 18%; Italian, 10%, Romansch, 1%

Religion : Roman Catholic, 46.2%; Protestant, 47.3%; No religion, 7.4%

Literacy rate : 99%

Type of Government : Federal Republic

National name : Schweiz/Suisse/ Svizzera/ Svizra

Economic summary : Gross national product (1996): \$313.7 billion. Average annual growth

(1995-96): -0.8%. Per capita income: \$44,350. Arable land: 10%. Principal agricultural products: cheese and other dairy products, livestock. Labour force (1994): 3,776,000; foreign workers: 939,000, mostly Italian; In industry and craft: 50%. Major products: watches and clocks, precision instruments, machinery, chemicals, pharmaceuticals, textiles, generators, turbines. Natural resources: water power, timber, salt. Exports: machinery and equipment, precision instruments, textiles foodstuffs, metal products. Imports: transport equipment, foodstuffs, chemicals, textiles, construction materials. Major trading partners: E.C., U.S., Japan.

SYRIA

Syrian Arab Republic

Location: Located in Middle East, Syria has a coastline in the Mediterranean Sea. Turkey is located to its north, Iraq to its east and south-east, Jordan to its south and Lebanon and Israel to its west at the southern part of the country.

Area: 185,180 sq km

Population (est. 1998): 15.3 million (average annual growth rate: est. 1995-2000, 2.5%)

Capital: Damascus

Largest cities: Damascus, Aleppo, Homs, Hama, Latakia

Principal rivers: Euphrates (Al Furat), Asi (Orontes)

Highest point: Jabal ash Shaik (Mount Hermon), 2,814 m (9,232 ft)

Flag: Three horizontal stripes of red, white black, with two green stars on the white stripe

Unit: Syrian Pound

Language: Arabic

Religion: Islam, 90%; Christian, 10%

Literacy rate: 70.8%

Type of Government: Republic; under military regime

National name: Al-Jumhuriya al-Arabiya As-Suriya

Economic summary: Gross national product (1996): \$16.8 billion. Average annual growth (1995-96): 3.4%. Per capita income: \$1,160. Arable land: 28%. Principal agricultural products: cotton, wheat, barley, lentils, sheep, goats. Labour force: 2,400,000; in industry: 32%. Major industrial products: textiles, phosphate, petroleum, processed food, soap. Natural resources: chrome, manganese, asphalt, iron ore, rock salt, phosphate, oil, gypsum. Exports: petroleum, textiles, phosphate, farm products. Imports: machinery and metal products, textiles, fuels, foodstuffs. Major trading partners: Italy, Romania, C.I.S. countries, U.S., E.C., Arab countries, Canada.

TAIWAN

Republic of China

Location: Eastern Asia. The island of Taiwan (Formosa) is about 300 km off the south-east coast of China, separated from the mainland by the Formosa Strait. Also included in the territory are the Pescadores islets, and Quemoy and Matsu islands which are close to mainland China.

Area: 36,182 sq km

Population (est. mid-1997): 21.7 million (average annual growth rate: 0.95%)

Capital: Taipei

Largest cities: Taipei, Kaohsiung, Taichung, Tainan, Chilung (Keelung)

Principal rivers: Hsia-tan-shui Ch'i, Chosui Ch'i

Highest point: Yu Shan, 3997 m (13,113 ft)

Flag: Red with a blue first quarter bearing the state emblem, a 12-pointed white sun in a blue sky, in white

Monetary unit: New Taiwan dollar

Languages: Chinese (Mandarin)

Religion: Buddhist, 4.86 million; Taoist, 3.85 million; Protestant, 4,22,000; Catholic, 3,04,000.

Literacy rate: 86%

Type of Government: Democracy

Economic summary: Gross national product (1996): \$315 billion. Real growth rate: 5.7%. Per capita income: \$14,700. Arable land: 24%; Labour force: (1994): 9.08 m.; in industry: 40%; in agriculture: 13%; in services: 47%. Principal agricultural products: rice, yams, sugarcane, bananas, pineapples, citrus fruits. Major industrial products: textiles, clothing, chemicals, processed foods, electronic equipment, cement, ships, plywood. Natural resources: coal, natural gas, limestone, marble. Exports: textiles, electrical machinery, plywood. Imports: machinery, basic metals, crude oil, chemicals. Major trading partners: U.S., Japan, Hong Kong, Germany.

TAJIKISTAN

Republic of Tajikistan

Location: Tajikistan (earlier name Tadzhikistan) is situated between 39° 40' and 36° 40' N lat. and 67° 20' and 75° E long., north of the Oxus (Amu-Darya). On the west and north it is bordered by Uzbekistan and Kirghizia; on the east by Chinese Turkistan and on the south by Afghanistan.

Area: 143,100 sq km

Population (est. 1998): 6.2 million (average annual rate of natural increase: est. 1995-2000, 1.9%)

Capital: Dushanbe

Largest cities: Dushanbe, Khudzand (formerly Leninabad), Kurgan-Tyube and Kutyab

Highest point : Mount Garmo, 7,495 m (24,590 ft) It was known as Pik Kommunizama (Communism Peak) when it was the highest mountain of the former U.S.S.R.

Flag : Red, with a stripe divided white over green running across the centre; in the canton a hammer and sickle in yellow and a red star outlined in yellow

Monetary unit : Russian Ruble

Languages : Tajik

Religion : Predominantly Sunni Muslim

Literacy : 98%

Type of Government : Parliamentary Republic

National name : Respubliki i Tojikiston

Economic summary : Gross national product (1996): \$2.0 billion. Average annual growth (1995-96): -7.0%. Per capita Income: \$340. Arable land : 6%. Labour force : 2.75 m. Industries : Aluminium, zinc, lead, cement, vegetable oil, metal cutting machine tools, refrigerators, freezers. Agriculture: Cotton, grains, fruits, grapes. The mineral deposits are brown coal, lead, zinc and oil. Uranium, radium, arsenic and bismuth are the rare elements found. Asbestos, mica, corundum and emery, potassium salts, sulphur and other minerals have also been found in the republic. Exports : aluminium, cotton, fruits, vegetable oils, textiles. Imports : Chemicals machinery and transport equipment, textiles, foodstuffs. Trading partners : Russia, Kazakhstan, Ukraine, Uzbekistan.

TANZANIA

United Republic of Tanzania

Location : East Central Africa. Tanzania has a coastline on the Indian Ocean. Kenya and Uganda are to its north, Rwanda, Burundi and Zaire to its west, and Zambia, Malawi and Mozambique to its south. The country includes the islands of Zanzibar and Pemba in the Indian Ocean, about 40 km off the coast.

Area : 945,037 sq km

Population (est. 1998) : 32.2 million (average annual growth rate : est. 1995-2000, 2.3%)

Capital and largest city : Dodoma

Other major cities : Dar es Salaam, Mwanza, Tanga, Zanzibar

Principal rivers : Pangani (Ruvu), Rufiji, Rovuma

Highest point : Kilimanjaro, 5,894 m (19,340 ft) the highest point in Africa.

Flag : Divided diagonally green, black and blue, with the black stripe edged in yellow

Monetary unit : Tanzanian shilling

Languages : Swahili, English, local languages

Religion : Christian, 40%; Islam, 33%

Literacy rate : 67.8% (1995)

Type of Government : Republic

National name : Jamhuri ya Mwungano wa Tanzania

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$5.2 billion. Average annual growth (1995-96): 4.6%. Per capita income: \$170. Arable land: 5%. Principal agricultural products: coconuts, maize, rice, wheat, cotton, coffee, sisal, cashew nuts, tea, tobacco, pyrethrum, cloves. Labour force: 732,200; in agriculture, 90%; in industry and commerce (1996) : 10%. Major industrial products: textiles, light manufactures, refined oil, processed agricultural products, diamonds, cement, fertiliser. Natural resources: hydroelectric potential, unexploited iron and coal, natural gas. Exports: coffee, cotton, sisal, diamonds, cloves, cashew nuts. Imports: manufactured goods, textiles, machinery and transport equipment, crude oil, foodstuffs. Major trading partners: U.K., Germany, U.S., Denmark, Kenya Netherlands, Hong Kong

THAILAND

Kingdom of Thailand

Location : Located in South-east Asia, Thailand has a coastline on the Gulf of Siam in the South China Sea. Laos and Cambodia (Kampuchea) are to the east, Burma to the north and west, and Malaysia to the south. Thailand includes the main part of the Isthmus and Peninsula of Kra, north of Malaysia.

Area : 513,115 sq km

Population (est. 1998) : 59.6 million (average annual growth rate : est. 1995-2000, 0.8%)

Capital and largest city : Bangkok

Other major cities : Nakhon Ratchasima (Khorat), Songkhla, Chiang Mai, Chon Buri

Principal rivers : Mekong, Chao Phraya, Mae Nam Mun

Highest point : Doi Inthanon, 2,595 m (8,514 ft)

Flag : Five horizontal stripes of red, white, blue, white and red, with the blue of double width

Monetary unit : Baht

Languages : Thai (Siamese), Chinese, English

Religion : Buddhist, 94.4%; Islam, 4%;

Hinduism, 1.1%; Christian, 0.5%

Literacy rate : 94% (1995)

Type of Government : Constitutional monarchy.

National name : Thailand

Economic summary : Gross national product (1996): \$177.5 billion. Average annual growth (1995-96): 5.4%. Per capita income: \$2,960. Arable

land: 34%. Principal agricultural products: rice, rubber, corn, tapioca, sugar, coconuts, pineapples. Labour force: (1992): 32.4 m.; in agriculture: 62%; in commerce: 13%; in service, including government: 11%. Major industries: textiles and garments, agricultural processing, beverages, tobacco, cement, light manufacturing, electric appliances and components. Natural resources: fish, natural gas, forests, fluorite, tin, tungsten. Exports: machinery and manufactures, agricultural products, fishery products. Imports: capital goods, intermediate goods and raw materials. Major trading partners: Japan, U.S., Singapore, Malaysia, Netherlands, U.K., Germany, Hong Kong, France, China.

TOGO

Republic of Togo

Location : West Africa. The hinterland runs north from a coastal strip on the Atlantic Ocean, Benin is to the east, Ghana to the west and Burkina Faso to the north.

Area : 56,785 sq km

Population (est. 1998) : 4.4 million (average annual growth rate : est. 1995-2000, 2.7%)

Capital and largest city : Lome

Principal rivers : Mono, Oti

Highest point : Pic Baumann, 983 m (3,225 ft)

Flag : Five horizontal stripes of green and yellow, a red quarter with a white star

Monetary unit: Franc CFA

Languages: Ewe, Mina (south), Kabye, Cotocoli (north), French (official), and many dialects

Religion : Indigenous beliefs, 70%; Christian, 10%; Islam, 10%

Literacy rate : 52% (1995)

Type of Government : Republic

National name : Republique Togolaise

Economic summary : Gross national product (1996): \$1.3 billion. Average annual growth (1995-96): 7.4%. Per capita income: \$300. Arable land: 25%. Principal agricultural products: yams, millet, sorghum, cocoa, coffee, rice, cotton. Labour force in agriculture: 78%. Major industrial products: phosphate, textiles, processed food. Natural resources: marble, phosphate, limestone. Exports: phosphate, cotton, cocoa, coffee. Imports: consumer goods, fuels, machinery, chemical products, foodstuffs. Major trading partners: E.C., Japan, U.S., Africa.

TONGA

Kingdom of Tonga

Location : Located in South-west Pacific Ocean, Tonga comprises an archipelago of about 150 islands. Fiji is about 600 km to the west and

Sydney (Australia) about 3,000 km to the south-west. There are three main groups, Tongatapu, Vava'u and Ha'apai.

Area : 748 sq km

Population (est. mid-1997) : 107,335 (average annual growth rate : 0.8%)

Capital : Nuku'alofa

Principal rivers : There are no significant rivers

Highest point : Kao, 1,030 m (3,380 ft)

Flag : Red with a white quarter bearing a red couped cross

Monetary unit : Pa'anga

Languages : Tongan, English

Religion : Christian; Free Wesleyan Church claims over 30,000 adherents

Literacy rate : 57%

Type of Government : Constitutional Monarchy

Member of Commonwealth of Nations

Economic summary : Gross domestic product (1994): \$145 million. Real growth rate: -11.0%. Per capita income: \$1,482. Arable land: 25%; labour force: 70%. Principal products: yams, taro, papaya, pineapples, coconuts, tobacco, peanuts, bananas, copra. Major industrial products: copra, desiccated coconut. Natural resources: fish, timber. Exports: copra, coconut products, vegetables, fruits, bananas. Imports: manufactures, foodstuffs, machinery, transport equipment, fuels, chemicals, building materials. Major trading partners: New Zealand, Australia, Fiji, U.S., Japan, E.C.

TRINIDAD AND TOBAGO

Republic of Trinidad and Tobago

Location : Eastern Caribbean Sea. Trinidad island is 16 km from the coast of Venezuela, Tobago island is 34 km north-east of Trinidad island. To the north is Grenada, southernmost of the Windward Islands.

Area : 5,124 sq km

Population (est. 1998) : 1.3 million (average annual growth rate : est. 1995-2000, 0.8%)

Capital and largest city : Port-of-Spain

Other major cities : San Fernando, Arima

Principal rivers : Caroni, Orotoire Oropuche

Highest point : Cero Aripo, 940 m (3,085 ft)

Flag : Red with a diagonal black stripe edged in white

Monetary unit : Trinidad and Tobago dollar

Languages : English (official); Hindi, French, Spanish

Religion : Christian, 60.6%; Hindu, 23.8%; Islam, 6%

Literacy rate : 98%

Type of Government : Parliamentary Democracy

Member of Organisation of Economic Co-operation and Development

Economic summary: Gross national product (1995): \$13.5 billion. Average annual growth (1995-99): 2.2%. Per capita income: \$3,870. Arable land: 24%. Labour force: 504,500. Principal agricultural products: sugarcane, cocoa, coffee, citrus. Main industrial products: petroleum, processed food, tourism. Natural resource: petroleum, asphalt. Exports: petroleum and petroleum products, steel products, fertiliser, sugar, wine, textiles. Imports: raw material, consumer goods, capital goods. Major trading partners: U.S., Germany, Latin America, Western Europe, U.K., Canada.

TUNISIA

Republic of Tunisia

Location: North Africa. The Mediterranean Sea forms its western border of Tunisia, with Algeria to the west and Libya to the south-east.

Area: 163,267 sq km

Population (est. 1998): 9.5 million (average annual growth rate: est. 1995-2000, 1.8%)

Capital and largest city: Tunis

Other major cities: Sfax (Safaqis), Ariyannah and Elmedhien are both part of the Tunis agglomeration, Sousse (Susah)

Principal river: Medjerda

Highest point: Jabal ash-Shanabi, 1,544 m (5,065 ft)

Flag: Red with a white circle in the middle, on which is a five-pointed red star encircled by a red crescent

Currency unit: Tunisian dinar

Languages: Arabic, French

Religion: Islam (Sunni), 98%; Christian, 1%; Jewish less than 1%

Literacy rate: 67% (1995)

Type of Government: Republic

Referral name: Al-Jumhouriya AtTunisia

Economic summary: Gross national product (1995): \$17.6 billion. Average annual growth (1995-99): 1.3%. Per capita income: \$1,930. Arable land: 20%. Principal agricultural products: wheat, citrus fruits, grapes, dates. Labour force: 2,300,000; in agriculture: 32%; in industry: 21%.

Exports: crude oil, olive oil, textiles and leather, chemical fertilisers, petroleum. Natural resources: oil, phosphates, iron ore, lead, zinc. Imports: petroleum, phosphates, textiles. Imports: machinery and equipment, consumer goods, foodstuffs.

Major trading partners: E.C., C.I.S. countries, Middle East, U.S., Turkey, China, Japan, Switzerland.

Republic of Turkey

Location: Located in South-eastern Europe, has coastline to the north on the Black Sea, south on the Mediterranean Sea and west on the Aegean Sea. Republics of Georgia, Armenia to the north-east, Iran to the east, Iraq to the south-east, Greece to the west and Bulgaria to the north-west. The Sea of Marmara is an outlet through the Bosphorus to the Black Sea and through the Dardanelles to the Mediterranean Sea.

Area: 779,452 sq km

Population (est. mid-1997): 63.5 million (average annual growth rate: 1.64%)

Capital: Ankara

Largest cities: Istanbul, Ankara, Izmir, Adana, Bursa, Gaziantep, Konya, Mersin, Kayseri, Eskisehir, Diyarbakir, Antalya, Samsun

Principal rivers: Euphrates (Firat), Tigris (Dicle), Kizilirmak (Halys), Sakarya

Highest point: Buyuk Agirdagi (Mount Ararat), 5,185 m (17,011 ft)

Flag: A white crescent and star on red

Monetary unit: Turkish Lira

Language: Turkish

Religion: Islam (mostly Sunni), 98%

Literacy rate: 82.5%

Type of Government: Republic

National name: Turkiye Cumhuriyeti

Economic summary: Gross national product (1996): \$177.5 billion. Average annual growth (1995-96): 6.8%. Per capita income: \$2,820. Arable land: 20%. Principal agricultural products: cotton, tobacco, cereals, sugarbeets, fruits, nuts. Labour force: 39,035,751; in industry: 24.0%; in agriculture, 13.1%; in transportation, 12.2%. Major industrial products: textiles, processed foods, steel, petroleum. Natural resources: coal, chromite, copper, borate, sulfur, petroleum. Exports: cotton, tobacco, fruits, nuts, livestock products, leather. Imports: machinery, transport equipment, mineral fuels, fertiliser, chemicals, consumer goods. Major trading partners: Germany, Iran, France, U.S., U.K., Japan.

TURKMENISTAN

Republic of Turkmenistan

Location: The Republic of Turkmenistan is located by the Autonomous Republic of Dagestan, a constituent of Uzbekistan, to the north, to the south, by the Islamic Republic of Iran, and the Caspian Sea on the west.

Area: 488,100 sq km

Population (est. 1998) : 4.3 million (average annual rate of natural increase : est. 1995-2000, 1.9%)

Capital : Ashgabat

Largest cities : Chardzhou, Mary (Merv), Nebit-Dag and Krasnovodsk

Principal rivers : Amu Darya, Murgah

Highest point : Firyuza, 2,942 m (9,652 ft)

Flag : Green, with a white crescent and five white stars, and a red, white and black stripe of five carpet patterns near the hoist

Monetary unit : Manat

Languages : Turkmen, 72%; Russian, 12%; Uzbek, 9%

Religion : Mostly Sunni Muslims

Literacy rate : 98%

Type of Government : Republic

National name : Turkmenistan Respublikasy

Economic summary : Gross national product (1996): \$4.3 billion. Average annual growth (1995-96): -2.4%. Per capita income: \$940. Labour force 1993: 2.05 m : in agriculture and forestry, 42%; in industry and construction 21%. Industries : oil and gas, petrochemicals, fertilizers, food processing, textile. Agriculture : cotton, fruits, vegetables. Exports : natural gas, oil, chemicals, cotton, textiles, carpets. Imports : machinery and parts, plastic and rubber textiles.

TUVALU

Location : Located in South-west Pacific Ocean. Tuvalu comprises a group of atolls including nine main islands. Kiribati is to the north, Fiji to the south and Australia is 4,000 km to the south-west. Funafuti is the main island.

Area : 24 sq km

Population (est. mid-1997) : 10,297 (average annual growth rate: 1.45%)

Capital and largest city : Fongafale

Principal rivers : There are no significant rivers

Highest point : An unnamed point 6 m (20 ft)

Flag : Light blue with the Union Jack in the canton and nine gold stars in the fly arranged in the same pattern as the nine islands

Monetary unit : Australian dollar

Languages : Tuvaluan, English

Religion : Church of Tuvalu (Congregationalist), 97%

Literacy rate : Less than 50%

Type of Government : Democracy

Member of Commonwealth of Nations

Economic summary : Gross national product (1994): \$8 million. Per capita income: \$924. Principal agricultural products: copra and coconuts. Exports: copra. Imports: food,

fuels, machinery, animals, manufactured goods. Major trading partners: Australia, Fiji, New Zealand.

UGANDA

Republic of Uganda

Location : East Africa. Uganda is a landlocked country. Kenya is located to the east, Tanzania and Rwanda to the south, Zaire to the west and Sudan to the north. Lake Victoria is part of the southern border and is shared with Kenya and Tanzania.

Area : 241,038 sq km

Population (est. 1998) : 21.3 million (average annual growth rate : est. 1995-2000, 2.6%)

Capital and largest city : Kampala.

Other major cities : Jinja, Mbale, Masaka, Entebbe

Principal rivers : Nile, Semliki

Highest point : Ngaliema, 5,118 m (16,763 ft)

Flag : Six horizontal stripes of black, yellow, red, black, yellow and red. In the centre is a small white disc bearing a representation of a Balearic Crested Crane.

Monetary unit : Ugandan shilling

Languages : English (official), Swahili, Luganda, Ateso, Luo

Religion : Christian, 66%; Islam, 16%

Literacy rate : 61.8% (1995)

Type of Government : Republic

Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$5.8 billion. Average annual growth (1995-96): 9.4%. Per capita income: \$300. Arable land: 23%. Principal agricultural products: coffee, tea, cotton, sugar. Labour force: 8.13 m; in subsistence activities : 94%. Major industrial products refined sugar, beer, tobacco, cotton textiles, cement. Natural resources: copper, cobalt, limestone, salt. Exports: coffee, cotton, tea. Imports: petroleum products, machinery, transport equipment, metals, food. Major trading partners: U.S., U.K., Kenya, Italy, France, Spain, South Africa.

UKRAINE

Ukraine

Location : The republic is bounded in the east by Russia, the north by Belorussia, the west by Poland, Slovakia, Hungary, Romania and Moldova, and the south by the Black Sea and the Sea of Azov.

Area : 603,700

Population (est. 1998) : 51.2 million (average annual rate of natural increase : est. 1995-2000, -0.4%)

Capital : Kyiv (Kiev)
Largest cities : Kharkiv, Donetsk, Odessa, Dnepropetrovsk, Lviv, Zaporozhye, Krivoy Rog
Principal rivers : Don, Dnepr, Dnestr, Donets, Bug
Highest point : Mount Hoverla, 2,061 m (6,762 ft)

Flag : Blue over yellow horizontally
Monetary unit : Karbovanets
Languages : Ukrainian
Religion : Orthodox, 76%; Ukrainian Catholic, 13.5%; Jewish 2.3%; Baptist Mennonite, Protestant and Muslim, 8.2%

Literacy rate (1992) : 99%
Type of Government : Constitutional Republic
National name : Ukrayina

Economic summary : Gross national product (1996): \$60.9 billion. Average annual growth (1995-96): -9.9%. Per capita income: \$1,200. Labour force (1993): 29.4 m : in industry and construction, 41%; agriculture and forestry, 19%; health, education and culture, 18%; trade and distribution, 8%; transport and communication, 7%. Mineral resources: Iron ore, coal, manganese, natural gas, oil, salt, sulphur, graphite, titanium, kaolin, nickel, mercury. The republic contains some of the richest land in the former Soviet Union. Important agricultural crops: Grain, vegetables, meat, milk. Industrial production: steel, rolled metal products, steel pipes, cement, sulphuric acid, refrigerators, washing machines and vacuum cleaners. Exports: coal, electric power, ferrous and non-ferrous metals, chemicals, machinery and transportation equipment, grain and meat. Imports: machinery and parts, transportation equipment, chemicals and textiles. Major trading partners: Russia, Belarus and Kazakhstan.

UNITED ARAB EMIRATES

Location : Located in Middle East, the United Arab Emirates has a coastline on the Gulf, known as the Trucial Coast. Oman is to its east, Saudi Arabia to its south and west and Qatar to its north-west.

Area : 82,880 sq km
Population (est. 1998) : 2.4 million (average annual growth rate : est. 1995-2000, 2%)
Capital and largest city : Abu Dhabi
Other major cities : Dubai, Sharjah, al Ayn
Principal rivers : There are no permanent streams

Highest point : Al-Hajar, 1,189 m (3,901 ft)
Flag : Three horizontal stripes of green, white and black, with a vertical red stripe in the hoist
Monetary unit : Dirham

Language : Arabic; Farsi and English widely spoken

Religion : Islam (Sunni, 80%; Shiite, 16%); others, 4%

Literacy rate : Adult illiteracy, 79% (1995)

Type of Government : Federation of emirates

Economic summary : Gross national product (1994): \$38.4 billion. Average annual growth (1993-94): 8.6%. Per capita income: \$20,654. Arable Land : 0%; irrigated land, 19.3 sq. miles. Principal agricultural products: vegetables, dates, poultry, fish. Labour force (1986 est.): 580,000; 80% is foreign; in industry and commerce: 85%. Major industrial products: light manufactures, petroleum, construction materials. Natural resources: oil. Exports: petroleum, dates, fish, natural gas. Imports: machinery, consumer goods, food, capital goods. Major trading partners: Japan, Western Europe, U.S., Singapore, Korea.

UNITED KINGDOM

United Kingdom of Great Britain and Northern Ireland

Location : Located in North-west Europe, the Kingdom comprises the island of Great Britain (which includes England, Wales and Scotland). It is 35 km off the north-west coast of France and Northern Ireland (the north-east part of the island of Ireland), which is 30 km west of Scotland across the Irish sea. The islands of Great Britain and Ireland (including the territory of the Republic of Ireland), together with the Isle of Man, are known as the British Isles.

Area : 228,356 sq km

Population (est. 1998) : 58.2 million (average annual growth rate : est. 1995-2000, 0.1%)

Capital : London, England

Largest cities : Manchester, Birmingham, Glasgow, Leeds, Sheffield, Liverpool, Bradford, Edinburgh, Bristol.

Principal rivers : Severn, Thames (with Churn), Trent-Humber, Aire (with Ouse), Ouse, Wye, Tees (with Tummel), Nene, Clyde

Highest point : Ben Nevis, 1,392 m (4,568 ft)

Flag : The Union Jack. The combined crosses of St. George (red), St Andrew (white) and St Patrick (red), the red fimbriated in white and blue ground.

Monetary unit : Pound Sterling (£)

Languages : English, Welsh, Scots Gaelic

Religions : Church of England (established church); Church of Wales (disestablished church); Church of Scotland (established church); Church of Ireland (disestablished church); Methodist; Congregational;

Literacy rate : 99%

Type of Government : Constitutional Monarchy

Economic summary : Gross national product (1996): \$1,152.1 billion. Average annual growth (1995-96): 2.6%. Per capita income: \$19,600. Arable land: 29%. Principal agricultural products: wheat, barley, potatoes, sugar beets, livestock, dairy products. Labour force (June 1992): 28,048,000 : in services, 60.6%; in manufacturing and construction: 27.2%. Major industrial products: machinery and transport equipment, metals, processed food, paper, textiles, chemicals, clothing aircraft, ship building, electronics and communications. Natural resources: coal, oil, gas. Exports: machinery, transport equipment, chemicals, petroleum manufactured goods, semi-finished goods. Imports: foodstuffs, machinery, manufactured goods, semi-finished goods. Major trading partners: Western European nations, U.S.

UNITED STATES

The United States of America

Location : North America and Pacific Ocean.

The continental United States has Canada on the northern boundary and Mexico on the southern. Alaska is bounded to the south-east by Canada. Hawaii is in the central Pacific 3,900 km to the west of the mainland.

Area : 9,159,123 Sq. km.

Population (est. 1998) : 273.8 million (average annual growth rate : est. 1995-2000, 0.8%)

Capital : Washington, D.C.

Largest cities : New York, Los Angeles, Chicago, Houston, Philadelphia, San Diego, Detroit, Dallas, Phoenix, San Antonio, Boston, Fort Worth, Miami, Atlanta, Cleveland, Seattle, San Diego, Minneapolis, St. Louis, Baltimore, Pittsburgh.

Principal rivers : Mississippi (with Missouri and Red Rock), Rio Grande, Yukon (with Nisutlin), Arkansas, Colorado, Ohio (with Allegheny), Red River, Columbia

Highest point : Mount McKinley, 6,194 m (20,320 ft) in Alaska

Flag : Seven red and six white alternating stripes, horizontal; with a blue canton, extending down to the lower edge of the fourth red stripe from the top and displaying 50 white five-pointed stars, one for each state. The stars have one point directed vertically upward and they are arranged in six rows of five each, alternating with five rows of four each on the admission of additional states, stars are added effective on July 4 following the date of admission.

Monetary unit : U.S. dollar

Language : Predominantly English, stable Spanish-speaking minority

Religion : Protestants, 61%; Roman Catholic, 25%; Jews, 2%; others, 5%; none, 7%

Literacy rate (1991) : 97.9%

Type of Government : Federal Republic

Economic summary : Gross national product (1996): \$7,433.5 billion. Average annual growth (1995-96): 2.3%. Per capita income: \$28,020. Arable land : 20%. Principal products: corn, wheat, barley, oats, sugar, potatoes, soybeans, fruits, beef, veal, pork. Labour force (1995) : 132,304,000. Major industrial products: petroleum products, fertilisers, cement, pig iron and steel, plastics and resins, newsprint, motor vehicles, machinery, natural gas, electricity. Natural resources: coal, oil, copper, gold, silver, minerals, timber. Exports: machinery, chemicals, aircrafts, military equipment, cereals, motor vehicles, grains. Imports: crude and partly refined petroleum, machinery, automobiles. Major trading partners: Canada, Japan, Western Europe.

URUGUAY

Oriental Republic of Uruguay

Location : Uruguay is located on the east central part of South America. With a coastline on the Atlantic Ocean and on the River Plate estuary, Brazil is to the north and Argentina to the west. The Uruguay river forms the frontier with Argentina.

Area : 176,215 sq km

Population (est. 1998) : 3.2 million (average annual growth rate : est. 1995-2000, 0.6%)

Capital and largest city : Montevideo

Other major cities : Salto, Paysandu, Las Piedras, Rivera

Principal rivers : Rio Negro, Uruguay, Yi

Highest point : Cerro de las Animas, 500 m (1,643 ft)

Flag : Nine horizontal stripes of white and blue, a white canton with the 'Sun of May' in gold

Monetary unit : Uruguayan Peso

Language : Spanish

Religion : Roman Catholic, 66%; Protestant, 2%; Jewish, 2%

Literacy rate : 97% (1995)

Type of Government : Republic

National name : Republica Oriental del Uruguay

Economic summary : Gross national product (1996): \$18.5 billion. Average annual growth (1995-96): 7.5%. Per capita income: \$5,760. Arable land : 8%. Principal agricultural products: livestock, grains. Labour force (1994 est.): 1,100,000; in government service, 40.2%; in manufacturing: 21.8%; in commerce, 16.7%; in agriculture 11%. Major products: processed meat, wool and hides, textiles, shoes, hand-bags and leather wearing

apparel, cement, refined petroleum. Natural resources: hydroelectric power potential. Exports: meat, hides, fish. Imports: crude petroleum, transportation equipment, chemical, machinery, metals. Major trading partners: U.S., Brazil, Argentina, Germany.

UZBEKISTAN

Republic of Uzbekistan

Location : Uzbekistan is bordered on the north by Kazakhstan, on the east by Kirghizia and Tajikistan, on the south by Afghanistan, and on the west by Turkmenistan.

Area : 447,400 sq km

Population (est. 1998) : 24.1 million (average annual rate of natural increase : est. 1995-2000, 1.9%)

Capital : Tashkent

Largest cities : Tashkent, Samarkand, Andizhan and Namangan

Principal rivers : Amu Darya, Kara Darya

Highest point : Bannovka, 4,488 m (14,724 ft)

Flag : Blue, white and green stripes, with the white edged in red, and in the upper stripe a white crescent and 12 white stars

Monetary unit : Som/Ruble

Languages : Uzbek, 85%; Russian, 5%

Religion : Muslim (mostly Sunni), 75-80%

Literacy rate : 97%

Type of Government : Republic

National name : Ozbekiston Respublikasy

Economic summary : Gross national product (1996): \$23.5 billion. Average annual growth (1995-96): 1.1%. Per capita income: \$1,010. Labour force (1993): 10.55 m; in agriculture and forestry, 39%; in industry and construction 24%. Natural resources: natural gas, petroleum, coal, gold, uranium, silver, copper, lead, zinc, tungsten, molybdenum. Agricultural Crops : Cotton is the major crop. Exports : Cotton, gold textiles, chemicals, mineral fertilisers, vegetable oil. Imports: machinery and parts, consumer durables grain and other food. Major trading partners : Former Soviet republics.

VANUATU

Republic of Vanuatu

Location : Located in South-west Pacific Ocean, Vanuatu comprises 12 main and about 70 small islands, with Fiji 800 km to the east and New Caledonia 400 km to the south-west. The main islands are Elate, Espiritu Santo, Malekula and Tanna.

Area : 14,763 sq km

Population (est. mid-1997) : 181,358 (average annual growth rate: 2.12%)

Capital : Port Vila

Principal rivers : There are no significant rivers

Highest point : Mt. Tabwebesana, 1,888 m (6,195 ft)

Flag : Red over green, with a black triangle in the hoist, the three parts being divided by fimbriations of black and yellow, and in the centre of the black triangle a boar's tusk overlaid by two crossed fern leaves.

Monetary unit : Vatu

Religion : Presbyterian, 36.7%; Roman Catholic, 15%; Anglican, 15%; other Christian, 10%; indigenous beliefs, 7.6%; other, 15.7%

Literacy rate : 53%

Type of Government : Republic

Economic summary : Gross national product (1994): \$184 million. Average annual growth: 1.7%. Per capita income: \$1,117. Arable land: 1%. Principal agricultural products: copra, cocoa, coffee, livestock. Exports: copra, cocoa, coffee, frozen fish. Imports: machines and vehicles, raw materials, fuel, machinery. Major trading partners: France, New Zealand, Japan, Australia, Netherlands.

VATICAN CITY STATE

Location : Southern Europe. The city state is within the city of Rome in Italy. There are also areas outside the main city state.

Area : 0.44 sq km

Population (est. mid-1997) : 850 (average annual growth rate: 1.15%)

Flag : Vertically yellow and white. On the white are the crossed keys and tiara of the Papacy

Monetary unit : Lira

Languages : Latin, Italian and various other languages

Religion : Roman Catholic

Literacy : 100%

Type of Government : Monarchical-sacerdotal State

National name : Stato della Citta del Vaticano

Economic summary : Income (1992): \$92 million; expenses (1992): \$178 million. Deficit covered by special contributions from American Catholics.

VENEZUELA

Republic of Venezuela

Location : Venezuela is located north of South America. It has a coastline on the Caribbean Sea. Colombia is to the west and south, Guyana to the east and Brazil to the east and south.

Area : 912,050 sq km

Population (est. 1990) : 23.2 million (average annual growth rate : est. 1995-2000, 2.0%)

Capital : Caracas
Largest cities : Maracaibo, Valencia, Barquisimeto.
Principal rivers : Orinoco, Rio Mota, Coroni, Apure

Highest point : Pico Bolivar, 5,007 m (16,423 ft)

Flag : Three horizontal stripes of yellow, blue and red, with an arc of seven white stars in the centre and the national arms in the canton

Monetary unit : Bolivar

Language : Spanish, Indian dialects in interior

Religion : Roman Catholic (18.49 m)

Literacy rate : 91% (1995)

Type of Government : Federal Republic

National name : Republica de Venezuela

Economic summary : Gross national product (1996): \$67.3 billion. Average annual growth (1995-96): -1.6%. Per capita income: \$3,020. Arable land: 3%. Principal agricultural products: rice, coffee, corn, sugar, bananas, dairy and meat products. Labour force: 6,655,000; in services, 56%; in industry: 28%. Principal industrial products: refined petroleum products, iron and steel, paper products, cement, aluminium, textiles, transport equipment. Natural resources: petroleum, natural gas, iron ore, gold, hydroelectric power. Exports: petroleum, iron ore, bauxite. Imports: industrial machinery and equipment, manufactures, chemicals, foodstuffs. Major trading partners: U.S., Japan, Germany, Brazil, Italy.

VIETNAM

Socialist Republic of Vietnam

Located in South-east Asia, Vietnam has a coastline to the east and south on the China Sea. China is to the north, Laos and Cambodia (Kampuchea) are to the west.

Area : 329,566 sq km

Population (est. 1998) : 77.9 million (average annual growth rate: est. 1995-2000, 1.8%)

Capital : Hanoi

Largest cities : Ho Chi Minh City (Saigon), Hanoi, Haiphong, Da Nang, Nha Trang, Qui Nhon, Hue.

Principal rivers : Mekong, Songkoi, Songbo, Ma, Hongha

Highest point : Fan Si Pan, 3,142 m (10,308 ft)

Flag : Red with a yellow five-pointed star in the centre

Monetary unit : Dong

Language : Vietnamese (official), French, English, Khmer, Chinese

Religion : Buddhist, Roman Catholic, Islam, Taoist, Confucian, Animist

Literacy rate : 94% (1995)

Type of Government : Communist

National name : Cong Hoa Xa Hoi Chu Nghia Viet Nam

Economic summary : Gross national product (1996): \$21.9 billion. Average annual growth (1995-96): 9.3%. Per capita income: \$290. Arable land: 22%. Principal agricultural products: rice, rubber, fruits and vegetables, corn, sugarcane, fish. Labour force: 30,974,000; in agriculture: 65%. Major industrial products: processed foods, textiles, cement, chemical fertilisers, glass, tyres. Natural resources: forests, coal. Exports: agricultural products, coal, minerals. Imports: petroleum, steel products, railroad equipments, chemicals, medicines, raw cotton, fertilisers, grain. Major trading partners: C.I.S. countries, Singapore, Japan, Eastern Europe, Hong Kong, Thailand.

WESTERN SAMOA

Independent State of Western Samoa

Location : South Central Pacific Ocean. Western Samoa comprises nine islands in the Samoan group, with New Zealand about 2,900 km to the south-west and Hawaii about 3,700 km to the north-east.

Area : 2,831 sq km

Population (est. mid-1997) : 219,509 (growth rate: 2.34%)

Capital and largest city : Apia

Principal rivers : There are no significant rivers

Highest point : Mauga Silisili, 1,857 m (6,094 ft)

Flag : Red with a blue quarter bearing five white stars of the Southern Cross

Monetary unit : Tala

Languages : Samoan and English

Religions : Christian, 99.7%

Literacy rate : 97%

Type of Government : Constitutional monarchy
National name : Maloloto'atasi o Samoa i Sisilo

Member of Commonwealth of Nations

Economic summary : Gross national product (1994): \$118 million. Average annual growth: 13.5%. Per capita income: \$700. Arable land: 19%. Principal agricultural products: copra, coconut, cocoa, bananas, timber. Labour force: 38,000 (1987); in agriculture: 22,000. Agriculture accounts for 50% of the GDP. Major industrial products: timber, processed food, fish. Natural resources: timber. Exports: copra, cocoa,

coconut oil and cream, timber. Imports: food, manufactured goods, machinery. Major trading partners: New Zealand, EC, Australia, Japan, S., Fiji, Japan.

YEMEN

Republic of Yemen

Location : Formerly known as the states of Yemen and the Yemen Arab Republic, the Republic of Yemen occupies the south-western part of the Arabian Peninsula on the Red Sea opposite Ethiopia, and extends along the southern part of the Arabian Peninsula on the Gulf of Aden and the Indian Ocean. Saudi Arabia to the north and Oman is to the east.

Area : 527,970 sq km

Population (est. 1998) : 16.9 million (average annual growth rate : est. 1995-2000, 3.7%)

Capital : Sana'a

Commercial Capital : Aden

Largest cities : Aden, Taiz, Hodeida, Mukalla.

Principal river : Bana

Highest Point : Jabel Hadhar, 3,760 m (2,336 ft)

Flag : Three horizontal stripes of red, white and black.

Monetary unit : Rial

Language : Arabic

Religion : Islam (Sunni and Shiite)

Literacy rate : 38%

Type of Government : Republic

National name : Al Jamhuriya al Yamaniyah

Economic summary : Gross national product (1996): \$6.0 billion. Average annual growth (1995-96): -4.7%. Per capita income: \$380.

Principal agricultural products: wheat, sorghum, cattle, sheep, cotton, fruits, coffee, dates. **Major industrial products:** crude and refined oil, textiles, leather goods, handicrafts. **Natural resources:** traces of copper, sulphur, coal, quartz. **Exports:** cotton, coffee, hides and skins, vegetables, dried fish. **Imports:** foodstuffs, textiles and other manufactured consumer goods, sugar, grain, flour. **Major trading partners:** U.K., France, Japan, Saudi Arabia, Australia, U.S.

ZAIRE

(now Democratic Republic of Congo)

Location : Central Africa. Zaire forms the centre of Africa reaching from an eastern border with Uganda, Rwanda, Burundi and Tanzania, to the Atlantic Ocean, where there is a short coastline at the outlet of the Zaire (Congo) river which provides a corridor through Angolan territory. The main border to the west is with Congo, to the north with Central African Republic

and Sudan, and to the south with Angola and Zambia.

Area : 2,344,885 sq km

Population (est. 1998) : 49.2 million (average annual growth rate : est. 1995-2000, 2.6%)

Capital: Kinshasa

Largest cities : Lubumbashi, Mbuji-Maaji, Kananga.

Principal rivers : Zaire, Lualaba, Lomami, Oubangui, Uganbi, Kasai

Highest Point : Mont-Ngaliema, 5,109 m (16,763 ft)

Flag : Green with a yellow disc bearing an arm holding a flaming torch

Monetary unit : Zaire

Languages : French (official), English, Bantu dialects, mainly Swahili, Lingala, Ishiluba and Kikongo

Religions : Roman Catholic, 50%; Protestant, 20%; Kimbanguist, 10%; Islam, 10%; Syncretic and traditional, 10%

Literacy rate : 77.3% (1995)

Type of Government : Republic with strong presidential authority

National name: Republique du Congo

Economic summary : Gross domestic product (1996): \$5.7 billion. Real growth rate (1995-96): 3.1%. Per capita income: \$130. Arable land: 3%. **Principal agricultural products:** coffee, palm oil, rubber, quinine, casava, sugar, cotton, cocoa, bananas, plantains, vegetables, fruits. **Labour force:** 15,000,000; **In industry :** 13%. **Major industrial products:** processed and unprocessed minerals, consumer goods. **Natural resources:** copper, cobalt, zinc, industrial diamonds, manganese, tin, gold, silver, bauxite, iron, coal, hydroelectric potential. **Exports:** cobalt, diamonds, petroleum, coffee. **Imports:** consumer goods, foodstuffs, mining and other machinery, transport equipment, fuels. **Major trading partners:** Belgium, France, U.S., Germany, South Africa, Italy, Japan, U.K.

ZAMBIA

Republic of Zambia

Location : South Central Africa. Zambia is a landlocked country. Zaire and Tanzania are to its north, Malawi and Mozambique to its east, Zimbabwe, Botswana and Namibia (South-West Africa) to its south, and Angola to its west. The Zambezi river forms the boundary with Zimbabwe.

Area : 752,618 sq km

Population (est. 1998) : 8.7 million (growth rate: est. 1995-2000, 2.7%)

Capital : Lusaka
Largest cities : Lusaka, Kitwe, Ndola, Chingola.

Principal rivers : Zambezi, Kafue, Luapula
Highest Point : An unnamed peak in the Murching Mountains, 2,164 m (7,100 ft)

Flag : Green, within the fly is a panel of three vertical stripes of dark red, black and orange, and above these a soaring eagle in gold

Monetary unit : Kwacha
Languages : English and local dialects
Religion : Christian, 50-75%; Islam and Hindu, 1%; remainder indigenous beliefs

Literacy rate : 78% (1995)
Type of Government : Republic
Member of Commonwealth of Nations

Economic summary : Gross national product (1996): \$3.4 billion. Average annual growth (1995-96): 6.1%. Per capita income: \$360. Arable land: 7%. Principal agricultural products: corn, tobacco, rice, fruits, sugarcane. Labour force (1990): 2,644,000; in agriculture, 85%; in mining and manufacturing 6%. Major industrial products: copper, chemicals, textiles, fertilisers. Natural resources: copper, zinc, lead, cobalt, coal. Exports: copper, zinc, lead, cobalt, tobacco. Imports: manufactured goods, machinery and transport equipment, foodstuffs, fuels. Major trading partners: Western Europe, Japan, U.S., South Africa, Saudi Arabia, India.

ZIMBABWE

Location : South Central Africa. Zimbabwe is a landlocked country. Mozambique is located to its east, between Zimbabwe and the Indian

Ocean, Zambia to its north, Botswana to its west and South Africa to its south.

Area : 390,759 sq km
Population (est. 1998) : 11.9 million (average annual growth rate : est. 1995-2000, 2.1%)

Capital : Harare
Largest cities : Harare (formerly Salisbury), Bulawayo, Chitungulza, Gweru, Mutare (Umtali).
Principal rivers : Zambezi, Limpopo, Sabi
Highest Point : Mount Inyangani, 2,592 m (8,504 ft)

Flag : Seven horizontal stripes of green, yellow, red, black, red, yellow and green. On a white black-edged triangle in the hoist is a red star surmounted by the Zimbabwe Bird in yellow.

Monetary unit : Zimbabwean dollar
Languages : English (official), Ndebele, Shona
Religion : Christian, 25%; Animist, 24%; Syncretic, 50%

Literacy rate : 85.1% (1995)
Type of Government : Parliamentary Democracy

Economic summary : Gross national product (1996): \$6.8 billion. Average annual growth (1995-96): 8.1%. Per capita income: \$610. Arable land: 7%. Principal agricultural products: tobacco, corn, sugarcane, cotton, livestock. Labour force : 3,300,000; in agriculture: 74%; in transport and services, 16%. Major industrial products: steel, textiles, chemicals, vehicles. Natural resources: gold, copper, chrome, nickel, tin, asbestos. Exports: gold, tobacco, asbestos, copper, meal, chrome nickel, corn, sugar. Imports: machinery, petroleum products, transport equipment, foodstuffs. Major trading partners: South Africa, E.C., U.S.

13. Miscellaneous Information

Official Books of Various Countries

<i>Name of the Book</i>	<i>Country</i>
Blue Book	Any official report of the British Government
Green Book	Official publication of Italy and Iran
Grey Book	Official reports of the Japanese and Belgian Governments
Orange Book	Official publication of The Netherlands
White Book	Official publication of Germany, China and Portugal
Yellow Book	Official book of the French
White Paper	Short pamphlet giving authoritative account of facts issued by the Indian Government stating its views on a particular issue for the knowledge of general public

Newspapers and News Agencies

Name of the Newspaper	Country
Al-Ahram	Cairo (Egypt)
Izvestia	Moscow (Russia)
Dawn	Karachi (Pakistan)
Daily News	New York (USA)
The Daily Mirror	London (Great Britain)
The Times	London (Great Britain)
New Statesman	London (Great Britain)
New York Times	New York (USA)
Pravda	Moscow (Russia)
People's Daily	Beijing (China)
Merdeka	Jakarta (Indonesia)
Le Monde	Paris (France)

Important News Agencies

Agence France	
Presse (AFP)	France
Antara	Indonesia
Associated Press (AP)	America
Bangladesh Sangbad	
Sansthan (BSS)	Bangladesh
PTI, UNI, Samachar Bharti,	
Hindustan Samachar	India

People of Different Regions

Aborigines	: Earliest people in Australia (The term 'aborigine' is actually used for original people of any area.)
Bantus	: Central and Southern Africa
Bedouins	: Nomadic tribe in Africa and South West Asia
Berbers	: Algeria, Morocco, Tunisia
Bindbu	: Western Australia
Eskimo	: Tundra region in Canada and Greenland
Finns	: Tundra of Europe
Gauchos	: Uruguay, Argentina (the Pampas)
Hamits	: North-west Africa
Kirghiz	: Steppes of Asia
Kikuyu	: Kenya
Lapps	: Tundras of Europe
Maori	: New Zealand
Masai	: East Africa
Papuans	: New Guinea
Pygmies	: Congo (Zaire) Basin
Red Indians	: North America
Tartars	: Siberia
Veddars	: Sri Lanka

Famous Industrial Towns

Ahmedabad (India)	: Cotton textile industry
Anshan (China)	: Iron and steel industry

Baku (Azerbaijan)	: Petroleum
Bangkok (Thailand)	: Shipping
Belfast (Ireland)	: Shipbuilding
Birmingham (UK)	: Iron and Steel industry
Buenos Aires (Argentina)	: Dairying
Cadiz (Spain)	: Cork
Calcutta (India)	: Jute industry
Changchun (China)	: Automobiles and machine tools industry
Chelyabinsk (Russia)	: Iron and steel and machine tools industry
Chicago (USA)	: Iron and steel industry and meat-packing
Dhaka (Bangladesh)	: Muslim
Darjeeling (India)	: Tea processing
Detroit (USA)	: Automobile industry
Dundee (Scotland)	: First jute mill; linen manufacturing
Dresden (Germany)	: Optical and photographic apparatus
Dusseldorf (Germany)	: Iron and steel and engineering industry
Essen (Germany)	: Iron and steel, and engineering
Firozabad (India)	: Glass industry
Glasgow (Scotland)	: Iron and steel, shipbuilding and machinery manufacture
Gorky (Russia)	: Engineering industry
Havana (Cuba)	: Cigars
Hollywood (USA)	: Films
Jamshedpur (India)	: Iron and steel industry
Johannesburg (South Africa)	: Gold-mining
Kansas City (USA)	: Meat-packing
Kawasaki (Japan)	: Iron and steel industry
Kharkov (Ukraine)	: Machine building and engineering industry
Kiev (Ukraine)	: Engineering industry
Kimberley (South Africa)	: Diamond mining
Kobe (Japan)	: Iron and steel and engineering industries
Krivoi Rog (Ukraine)	: Iron and steel and engineering industries
Leeds (UK)	: Woollen textile industry
Leningrad (Russia)	: Shipbuilding and automobile industries
Los Angeles (USA)	: Petroleum and films
Lyons (France)	: Silk industry
Magnitogorsk (Russia)	: Iron and steel industry
Manchester (UK)	: Cotton textile industry
Milan (Italy)	: Silk textile industry
Multan (Pakistan)	: Pottery
Munich (Germany)	: Lenses
Nagoya (Japan)	: Cotton textiles, and engineering industry

New Orleans (USA) : Cotton textile Industry
Newcastle (UK) : Coal-mining and Iron and steel Industry

Nizhny Tagil (Russia) : Iron and steel Industry
Osaka (Japan) : Iron and steel and engineering Industry

Philadelphia (USA) : Locomotive Industry
Pittsburg (USA) : Iron and steel Industry
Plymouth (UK) : Shipbuilding
Rourkela (India) : Iron and steel Industry
Sheffield (UK) : Cutlery

Singapore : Important trading port
Tula (Russia) : Iron and steel Industry
Venice (Italy) : Glass Industry
Vienna (Austria) : Glass Industry
Vladivostok (Russia) : Shipping
Wellington (New Zealand) : Dairying
Zurich (Switzerland) : Light engineering industry

Leading Mineral Producers

Aluminium: Obtained from bauxite which is the ore. Chief producers — Australia, USA and Russia.

Asbestos: Canada and Zimbabwe.

Bauxite: Australia and Jamaica.

Coal: An important energy mineral. Chief producers—USA, China, Ukraine and Russia.

Copper: USA, Chile and Armenia.

Chromium: South Africa and Russia.

Diamonds: Zaire and South Africa.

Gold: South Africa and USA.

Iron Ore: USA and Australia. Iron ore is the basic raw material for the iron and steel industry.

Lead: Lead occurs in association with zinc.

Chief producers—USA, Russia and Australia.

Manganese: South Africa, Russia and India.

Is important for the iron and steel

Mercury: A metal which normally occurs in a liquid state. Chief producers—Italy and Spain.

Mica: India and USA.

Mineral Oil: Commonly called the petroleum or crude oil. Chief producers—USA and Saudi Arabia.

Natural Gas: Also a source of energy like mineral oil. These are mixtures of carbon and other combustible gases and are called hydrocarbons. Chief producers—USA and Russia.

Nickel: Canada and USA.

Petroleum Products: Made by refining crude oil. Chief producers—Japan and USA.

Phosphate: An important source of fertilizers. Chief producers—USA and Russia.

Platinum: A precious metal. Chief producers—Canada and South Africa.

Silver: Mexico and Canada.

Sulphur: Italy and Japan.

Salt (Rock Salt): USA and China.

Tin: Malaysia and Bolivia

Tungsten: China.

Zinc: Canada, Peru, Australia and USA.

Leading Producers of Industrial Products

Cotton Textiles: USA and India.

Woollen Textiles: Russia and Japan.

Silk Textiles: Japan and USA (the US industry is based upon imported raw silk).

Royon Textiles: USA and Japan.

Jute Textiles: India and Bangladesh.

Iron and Steel: USA, Japan and Germany.

Machine Tools: USA and Germany.

Locomotives: USA.

Automobile Industry: USA and Japan.

Aircraft Industry: USA and UK.

Shipbuilding Industry: Japan and Sweden—in terms of tonnage launched.

Paper and Pulp Industry: Canada and USA.

Cement Industry: USA

Fertilisers: The leading producers of nitrogenous fertilizers and superphosphate are USA and Russia. The chief producers of potash fertilisers are Russia and Germany.

Leading Producers of Agricultural Products

Wheat: Grows better in the Prairie and Steppe regions and areas with temperate climate. Chief producers — China, USA and Russia.

Rice: A crop of humid and hot-to-warm climates, and grown mainly in regions of tropical monsoon climate. Chief producers—China and India.

Maize: The most important crop among coarse grains. Chief producers—USA and China.

Millets: This group of crops includes jowar, bajra and ragi. Chief producers — India and China.

Barley: Rich source of protein. Chief producers—Baltic countries, Russia and USA.

Oil Seeds: Most of these are tropical and sub-tropical crops. India is the leading producer of groundnuts, USA and China of soyabean, and India and Brazil of castor seed.

Tea: A crop raised in monsoon climates on mountain slopes. Chief producers—India and Sri Lanka.

Coffee: Also grown in tropical (humid) climate. Chief producers—Brazil and Colombia.

Sugarcane: Mainly a tropical crop. Chief producers—India, Brazil and Cuba.

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Tobacco : Grows in various types of climate. Chief producers—China and USA.

Rubber : Requires humid tropical climate. Chief producers—Malaysia and Indonesia.

Cocoa : Needing a tropical climate, it is grown mainly in Africa. Chief producers—Ghana and Nigeria.

Cotton : Chief producers—USA, Russia and China. The leading producers of long staple cotton are USA and Egypt. Cotton requires tropical and sub-tropical climate.

Jute : Also a crop of the tropical climate. Chief producers—Bangladesh and India.

Flax : A fibre crop of the countries of northern Europe.

Hemp : Also a fibre crop. Chief producers—Russia, Baltic States, Poland and Italy.

Silk : The rearing of silkworms for silk is called sericulture and has been traditionally an occupation of the Orient. Chief producers of raw silk—Japan and China.

Grapes : Grown in Mediterranean temperate climate. Chief producers—France and Italy.

Apples : Require temperate climate. Chief producers—France and USA.

Potatoes : Also need temperate climate. Chief producers—Russia and Poland.

Leading Producers of Animal Products

Wool, cattle meat, pork and mutton, dairy products and fish are the most important animal products.

(i) **Wool** : Wool is of different types (classified on the basis of quality) and different countries produce wool of different grades. On the whole, Australia and Russia are the leading producers.

(ii) **Cattle Meat** : Although India has the largest cattle population in the world, it does not send anywhere in the production of beef meat. USA and Russia are the largest producers of beef. Chicago, USA is the largest meat market of the world and is called 'Meat City'.

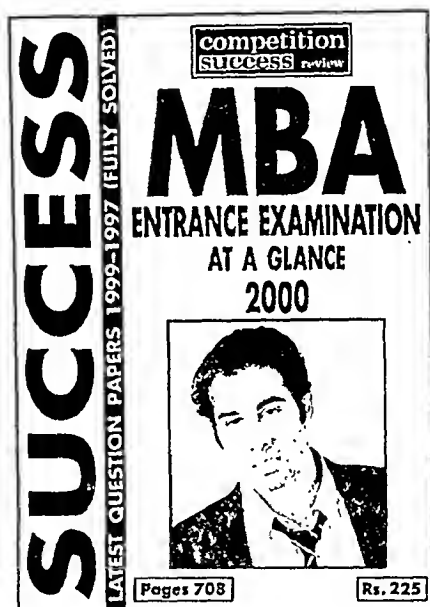
(iii) **Pork and Mutton** : The largest producer of pork is China followed by Russia. The leading producers of mutton are New Zealand and Australia.

(iv) **Dairy Products** : The dairy industry is well-developed in various parts. The largest producers of dairy are India, China, Russia and France and the biggest quantity of cheese comes from USA and India.

(v) **Fish** : The largest producer of fish in terms of total catch is Japan. Other Russia and Norway. The most important fishing grounds are the North and South Atlantic and North Pacific regions.

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Part VI

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Leading by Vision

1. United Nations Organisation

The United Nations grew out of the alliance of nations throughout the world against Nazi Germany in World War II. In the summer of 1941, a meeting between Franklin D. Roosevelt, President of the United States, and Winston Churchill, Prime Minister of Great Britain, resulted in the phrasing of the Atlantic Charter—a set of principles for world peace and cooperation among nations. Two years later (October 1943), the leaders again conferred—this time with Joseph Stalin, Premier of Russia—in Teheran (Iran) and agreed on the need for an effective instrument for maintaining international peace.

At the Dumbarton Oaks Conference in Washington, D.C., in 1944 (in which the US played a leading part), the first blueprints were formulated for organising the UN. The leaders of the three powers met again in February 1945 at Yalta and established a voting procedure for the UN.

In 1945, representatives from 50 nations met in San Francisco to phrase the basic Charter for a world organisation which would "save succeeding generations from the scourge of war..." The aims of this organisation, as stated in the Charter, were to keep peace and, through collective action, eradicate illiteracy, poverty, disease and chronic ill-health—often the causes of war.

Preliminary drafts of the Charter, which had been worked by specialists, were drafted in the final form at San Francisco. Ratified by 29 nations—the necessary majority, including the five permanent members of the Security Council—it became effective on October 24, 1945. This day is now the official birthday of the UN and celebrated each year as United Nations Day throughout the world.

The specific purposes of the UN, as outlined in the Charter, are to:

1. Maintain international peace and security.
2. Work towards improved relations among nations, based on respect for the principle of equal rights and self-determination of peoples.
3. Cooperate in finding a solution for international, social, economic, cultural and humanitarian problems and in advancing respect for human rights and basic freedoms.
4. Serve as a base for coordinating the actions of nations to attain these common goals.

To maintain peace and security in the world, the UN adopts various measures such as (i) appointing body of persons to help in bringing about an agreement between the opposing nations in

their dispute; (ii) sending investigation missions to troubled areas to gain first hand information; (iii) securing agreements to reduce armaments and work for disarmament; and (iv) preventing genocide by appealing to member countries to observe principles enunciated in the Universal Declaration of Human Rights.

UN HEADQUARTERS

The United Nations headquarters are located in New York, N.Y., between First Avenue and E. 42nd Street and E. 48th Street. The General Assembly Building (opened in 1951), Conference and Library buildings are interconnected. The Dag Hammarskjöld Library, built by a \$6,200,000 grant from the Ford Foundation, was dedicated on November 16, 1961. It has room for 400,000 volumes. To build the headquarters the US Government advanced an interest free loan of \$6,500,000 which was payable in annual instalments. John D. Rockefeller, Jr., contributed \$800,000 for land and the City of New York contributed an estimated \$26,500,000 for adopting the site. The United Nations has a post office originating its own stamps.

UN FLAG

UN emblem in white centred on a light blue ground.

LANGUAGES USED BY THE UN

There are six official working languages recognised by the United Nations. These are (1) Chinese, (2) English, (3) French, (4) Russian and (5) Spanish, which have been in use since the world body was organised. A sixth language, i.e., Arabic, was added by the General Assembly in 1973 and the Security Council in 1982.

UN STRUCTURE

1. General Assembly: The General Assembly is the discussion body of the United Nations and consists of all members of the UN. While each member-nation can send five delegates and six alternates to the Assembly, each nation has only one vote. A two-thirds of majority is needed to pass resolutions on important questions such as recommendation on peace and security, admission of new members, electing members to the council, budget considerations, and so forth. Other

questions are decided by a simple majority vote. No nation in the General Assembly has a veto power.

The Assembly meets regularly once a year (beginning on the third Tuesday of September) and also holds special or emergency sessions whenever necessary. As the "town meeting" of the world, the General Assembly can discuss any issue in any area except those issues on the Security Council agenda. When, however, the Security Council is unable to reach a decision on political action, under the "Uniting for Peace" resolution, on a simple majority vote, the Security Council can drop the issue from its agenda. The General Assembly can then deal with the problem and make its recommendations.

The Assembly receives and makes recommendations on reports from the Economic and Social Council and Trusteeship Council. In this capacity, the General Assembly can begin studies on, and offer plans for, international cooperation in politics, law, economics, social welfare, education, health and human rights. On the recommendation of the Security Council, the General Assembly elects the Secretary-General. Voting separately the Security Council and the General Assembly elect the judges of the International Court of Justice. The Assembly votes on new members approved by the Security Council and can also expel or suspend member-countries. The Assembly also elects the non-permanent members of the Economic and Social Council, as well as certain members of the Trusteeship Council.

2. Security Council: The Security Council has the basic responsibility for the maintenance of peace and security. It is also responsible for the functions of the UN in trust territories classed as "strategic areas". Although originally made up of 11 members, the strength of the Council by an amendment to the Charter, has been raised to 15 members, five of which are permanent: the United States, Britain, China, France and Russia. Its ten non-permanent members are elected by the General Assembly by two-thirds majority for a two-year term. Retiring members are not eligible for immediate re-election. The presidency of the Security Council is alternated on a monthly basis by its member-states (in English alphabetical order).

Each member of the Security Council has one vote. In voting on substantive rather than procedural measures, all permanent members must vote "yes" if the measure is to pass. A single negative vote (veto) by a permanent member automatically prevents the proposal from being passed. "Substantive" measures are those which require

action by member-states, thus involving political decisions; "procedural" measures pertain to decisions on the internal functioning of the Council's work. The ten non-permanent members of the Security Council do not have the veto power. Members of the Council must always be represented at UN headquarters since the Council can be called into session at any time in a matter of hours.

When a complaint is brought before the Security Council, the Council usually recommends negotiation or mediation as a means of settling the dispute. If this fails and fighting breaks out, the Security Council has the power to take collective action in recommending diplomatic and/or economic sanctions. Armed forces, supplied by member-nations, may be called to repel the aggressor or act as a buffer until the issue is settled. The Security Council also recommends (to the General Assembly) new nations for membership and names its candidate for Secretary-General. Along with the General Assembly, it elects judges to the International Court of Justice.

3. Economic and Social Council: The Economic and Social Council (ECOSOC), reporting to the General Assembly, works on economic, social, cultural and humanitarian problems. It is made up of representatives of 54 member-states (elected by a two-thirds majority of the General Assembly). Any country, not a member of ECOSOC, involved in a problem under discussion is invited to participate without the right to vote. At least two regular sessions of ECOSOC are held each year—one at UN headquarters in New York and the other in Geneva, Switzerland. Special meetings are called, if needed. Each member of ECOSOC has one vote and resolutions are passed by a majority vote.

ECOSOC has established five Regional Economic Commissions. These are ECE (Economic Commission for Europe—Geneva); ESCAP (Economic and Social Commission for Asia and the Pacific—Bangkok); ECLA (Economic Commission for Latin America—Santiago, Chile); ECA (Economic Commission for Africa—Addis Ababa); ECWA (Economic Commission for Western Asia—Baghdad). These Commissions have been established to enable the nations of the major regions of the world to cooperate on common problems and also to produce economic information. Additional functional commissions deal with such matters as statistics, population, human rights, economics and employment, status of women, transportation and communication and control of narcotic drug traffic. The Council helps

ordinate the activities of the inter-governmental specialised agencies.

4. Trusteeship Council: The Trusteeship Council prepares people for self-government or dependence. Membership consists of permanent members of the Security Council plus those nations which administer trust territories, and the needed additional members to maintain an equal balance between administering and non-administering nations. The latter are elected by the General Assembly. The Trusteeship Council supervises the administration of various territories governed by nations designated by the UN as trustees. The administrative power and the Council see to it that social, economic and educational progress is made and that the territories are prepared for effective self-government. The Trusteeship Council receives reports from missions, administering authorities and individuals. Any person with a complaint, in a trust territory, may make suggestions for improvement. The Council, however, does not determine or enforce a country's laws. Regular meetings of the Trusteeship Council are held twice a year. Each member has one vote and decisions are made by a simple majority.

5. International Court of Justice: The International Court of Justice, established by the UN Charter, settles international legal problems. All members of United Nations come under the rules of this Court although they are not required to bring cases before it. The Court is made up of 15 judges, chosen without regard to nationality, who are elected by the General Assembly and the Security Council. No two judges may represent the same country, but judges can, when their nine-year term expires, be re-elected.

Cases may be referred to the Court by member-nations involved in a dispute, in which case the Court's decision is binding upon them. Advisory opinions may be requested by the UN itself, in which case the Court's opinion must be accepted by a two-thirds majority vote. All questions are decided by a majority vote of the judges present. Where votes are equal, the President of the Court casts the deciding vote.

The President and Vice-President of the Court are elected for three years and may, when their term expires, be re-elected. The Court is permanently in session at The Hague, in Holland, but may hold its meetings elsewhere, if necessary. Its President is Jose Maria Ruda.

6. Secretariat: The Secretariat is headed by the Secretary-General. He is appointed by the General Assembly, on the recommendation of the Security Council, for a term of five years and is the

chief administrative officer of the United Nations. He also has the political responsibility to carry out the aims of the Charter. The Secretary-General may bring any matter before the Security Council which he considers a threat to international peace. He presides as Secretary-General, or authorises a deputy to do so, over all meetings of the General Assembly and other major UN organs. He must also carry out all functions entrusted to him by these organs and submit an annual report to the General Assembly on the work of the UN.

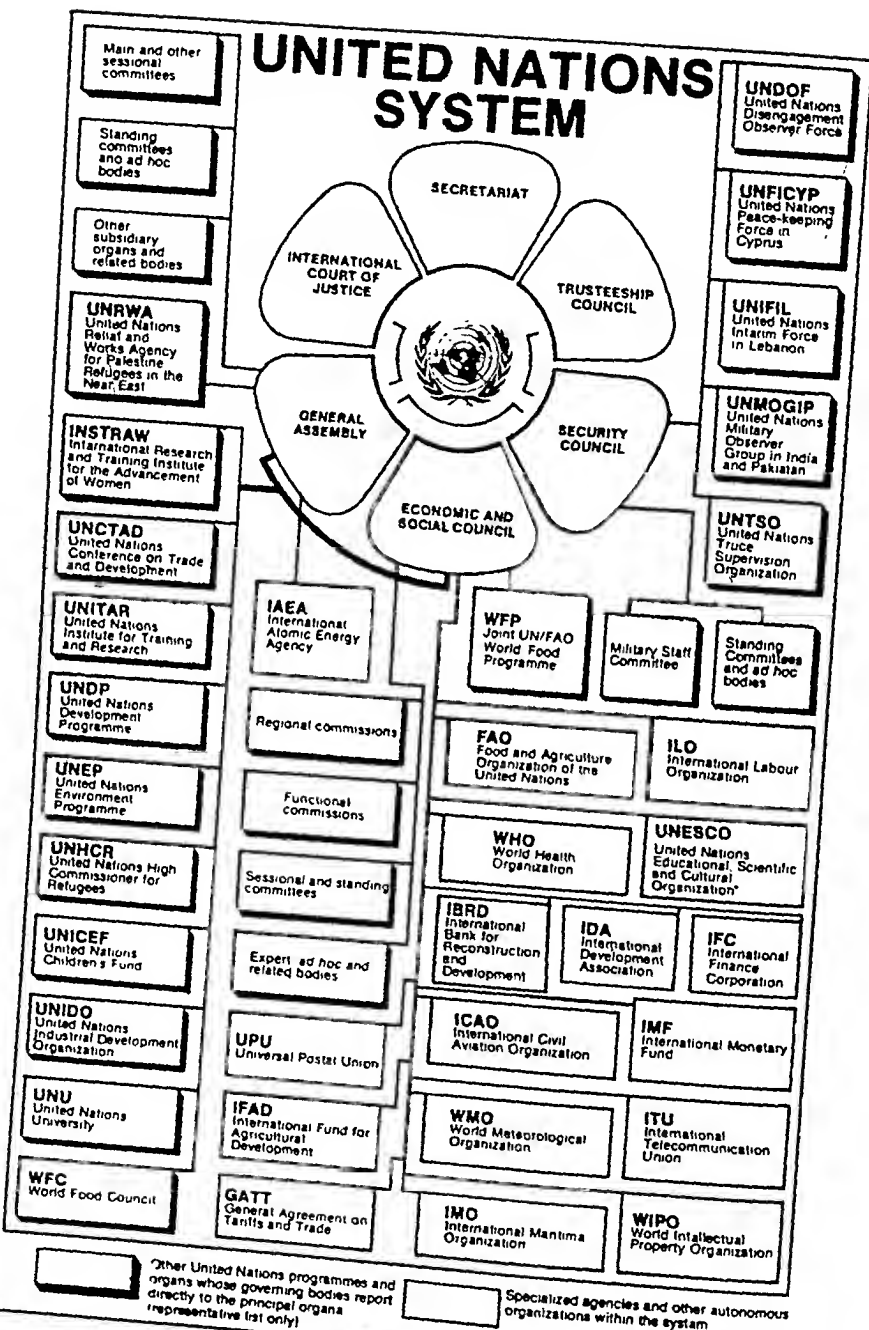
Offices of the Secretary-General consist of the Executive Office; Under-Secretary for General Assembly Affairs; Under-Secretaries for Special Political Affairs and Legal Affairs; Offices of the Controller of Personnel. The Secretariat is organised into administrative units, each of which is headed by an Under-Secretary. These include the following: Department of Political and Security Council Affairs; Department of Economic and Social Affairs; Department of Trusteeship and Information from Non-Self-Governing Territories; Office of Public Information; Office of Conference Services; Office of General Services of UN Office at Geneva.

The Secretary-General is assisted by 12 Under-Secretaries General and over 12 Assistant-Secretaries General. The first Secretary-General was Trygve Lie (Norway) — 1946-53; the second, Dag Hammarskjöld (Sweden)—1953-61; the third, U Thant (Burma)—1961-71; the fourth, Kurt Waldheim (Austria)—1972-81; the fifth, Javier Perez de Cuellar (Peru)—1982-1991; the sixth, Dr Boutros Boutros Ghali (Egypt) — 1992-1995. The present incumbent is Kofi Annan of Ghana who was appointed on January 1, 1997, for a five-year term.

MEMBER STATES OF THE UNO

Of the *de facto* sovereign states of the world, 182 are now members of the United Nations. North Korea, South Korea, the Baltic States of Estonia, Latvia and Lithuania, and the two Pacific Island nations of Micronesia and the Marshall Islands were admitted on September 17, 1991. Again on March 2, 1992, the UN General Assembly admitted nine new countries. These include eight former republics of the former Soviet Union—Moldova, Kazakhstan, Kyrgyzstan, Turkmenistan, Azerbaijan, Uzbekistan, Armenia, Tajikistan, and San Marino, a tiny republic located inside Italy's borders. Bosnia-Herzegovina, Croatia and Slovenia, the breakaway Yugoslav republics, were admitted to the UN on May 22, 1992. Georgia was admitted to the UN for the first time on August 13, 1992. Czech and Slovak Republics were admitted to the UN for the first time on January 21, 1993.

UNITED NATIONS SYSTEM



1993, Andorra joined in July 1993 and Palau, a trust territory administered by the United States joined in December 1994.

Czech and Slovak Republics were admitted to the UN on January 19, 1993, after Czechoslovakia ceased to exist. The Czech and Slovak Republics were born out of voluntary dissolution.

South Africa, whose membership was suspended, was readmitted in 1994. The new member added to the world body during 1994 was newly independent Pacific nation of Palau (area : 458 sq km; population: 18,000; estab. 1994).

The membership of East Germany and West Germany has been taken over by unified Germany in 1990.

Russia has replaced U.S.S.R. in December, 1991. The Baltic states, which were part of the USSR and the republics of the Commonwealth of Independent States, which too were part of the USSR are now independent members of the UN.

Kiribati, Nauru and Tonga, the three Pacific islands states joined in September 1999 raising the strength of the world body to 188.

To become a member of the UN, the country (i) must be peace loving and willing to accept the aims, objects and rules of the UN Charter, (ii) must be judged by the UN as being able to carry out these aims and objects, (iii) must be recommended by the UN Security Council for the membership, and (iv) the membership must be confirmed by the UN General Assembly by a two-thirds majority vote.

LIST OF MEMBERS OF THE UNITED NATIONS

Country	Year of joining UN
Afghanistan	1946
Albania	1955
Algeria	1962
Andorra	1993
Angola	1976
Antigua and Barbuda	1981
Argentina	1945
Armenia	1992
Australia	1945
Austria	1955
Azerbaijan	1992
Bahrain	1971
Bahamas	1973
Bangladesh	1974
Barbados	1966
Belgium	1945
Belize	1981
Benin (Dahomey)	1960
Bhutan	1971

Country	Year of joining UN
Bolivia	1945
Bosnia-Herzegovina	1992
Botswana	1966
Brazil	1945
Brunei	1984
Bulgaria	1955
Burma	1948
Burundi	1962
Byelorussia	1945
Cambodia (Kampuchea)	1955
Cameroon	1960
Canada	1945
Cape Verde	1975
Central African Republic	1960
Chad	1960
Chile	1945
China	1945
Colombia	1945
Comoro Islands	1975
Congo	1960
Costa Rica	1945
Croatia	1992
Cuba	1945
Cyprus	1960
Czech	1993
Denmark	1945
Djibouti	1977
Dominica	1978
Dominican Republic	1945
Ecuador	1945
Egypt	1945
El Salvador	1945
Equatorial Guinea	1968
Eritrea	1993
Estonia	1991
Ethiopia	1945
Fiji	1970
Finland	1955
France	1945
Gabon	1960
Gambia	1965
Georgia	1992
Germany, East & West/	1973
Germany, unified	1990
Ghana	1957
Greece	1945
Grenada	1974
Guatemala	1945
Guinea	1958
Guinea-Bissau	1974
Guyana	1966
Haiti	1945
Honduras	1960

<i>Country</i>	<i>Year of joining UN</i>	<i>Country</i>	<i>Year of joining UN</i>
Hungary	1955	Nigeria	1960
Iceland	1946	Norway	1945
India	1945	Oman	1971
Indonesia	1950	Pakistan	1947
Iran	1945	Palau	1994
Iraq	1945	Panama	1945
Ireland	1955	Papua New Guinea	1975
Israel	1949	Paraguay	1945
Italy	1955	Peru	1945
Ivory Coast	1960	Philippines	1945
Jamaica	1962	Poland	1945
Japan	1956	Portugal	1955
Jordan	1955	Qatar	1971
Kazakhstan	1992	Romania	1955
Kenya	1963	Rwanda	1962
Kiribati	1999	Saint Kitts and Nevis	1983
Korea, North	1991	Saint Lucia	1979
Korea, South	1991	Saint Vincent and Grenadines	1980
Kuwait	1963	San Marino	1992
Kyrgyzstan	1992	Sao Tome and Principe	1975
Laos	1955	Saudi Arabia	1945
Latvia	1991	Senegal	1960
Lebanon	1945	Seychelles	1976
Lesotho	1966	Sierra Leone	1961
Liberia	1945	Singapore	1965
Libya	1955	Slovakia	1993
Lithuania	1991	Slovenia	1992
Luxembourg	1945	Solomon Islands	1978
Macao	1994	Somalia	1960
Macedonia	1993	South Africa	1945/1994
Madagascar	1960	Spain	1955
Malawi	1964	Sri Lanka	1955
Malaysia	1957	Sudan	1956
Maldives	1965	Suriname	1975
Mali	1960	Swaziland	1968
Malta	1964	Sweden	1946
Marshall Islands	1991	Syria	1945
Mauritania	1961	Tajikistan	1992
Mauritius	1968	Tanzania	1961
Mexico	1945	Thailand	1946
Micronesia	1991	Togo	1960
Moldova	1992	Tonga	1999
Monaco	1993	Trinidad and Tobago	1962
Mongolia	1961	Tunisia	1956
Morocco	1956	Turkey	1945
Mozambique	1975	Turkmenistan	1992
Namibia	1990	Uganda	1962
Nauru	1999	Ukraine	1945
Nepal	1955	USSR/Russia	1945/1991
Netherlands	1945	United Arab Emirates	1971
New Zealand	1945	United Kingdom	1945
Nicaragua	1945	United States	1945
Niger	1960	Upper Volta	1960

Country	Year of joining UN
Uruguay	1945
Pakistan	1992
Tuvalu	1981
Venezuela	1945
Vietnam	1977
Western Samoa	1976
Yemen	1947

Country	Year of joining UN
Zaire (now renamed as Democratic Republic of Congo)	1960
Zambia	1964
Zimbabwe	1980

Note: 1. Switzerland and Taiwan are not the members of the UN.

2. UN Associated Agencies

Working in partnership with the United Nations various economic, social, scientific and technical aids is a group of inter-governmental organisations related to the United Nations by special agreements. Among these agencies are:

International Labour Organisation (ILO): Established in 1919 as an autonomous institution, it was associated with the League of Nations. In 1945, ILO became the first specialised agency of the United Nations. ILO is an inter-governmental agency with a tripartite structure, in which representatives of governments, employees and workers participate. It aims to promote social justice, improve conditions and living standard and promote economic stability.

ILO's member countries meet annually at a conference at ILO headquarters. It is attended by delegates, technical advisers and observers. Each member country can send four delegates, two representing the government and one each representing employers and workers.

The Governing Body of ILO has 48 members. The Director General is the head of ILO. He is elected by the Governing Body.

ILO introduces international labour standards. It provides assistance in improving such standards. (Headquarters: Geneva, Director General: Joan Somavia)

International Atomic Energy Agency (IAEA): The Agency, which functions under the aegis of the UN, came into being on July 29, 1957. It is an autonomous, inter-governmental organisation under the patronage of the U.N. 'Atoms for peace' is its guiding principle. It aims to promote the peaceful uses of atomic energy and to ensure that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purposes. It also assists in research and application of atomic power for peaceful uses such as the production of electric power in less developed countries. It promotes the exchange of scientific and technical information,

provides technical aid and supplies material and equipment. The three organs of IAEA are the General Conference, the Board of Governors and the Secretariat, headed by a Director General. The General Conference consists of all member States and it meets once a year and decides issues by a majority vote. (Headquarters: Vienna; Director General: Mohammed El Baradei)

Food and Agriculture Organisation (FAO): Established on October 16, 1945, at a meeting held in Canada, it aims to raise nutrition levels and living standards; secure improvements in production and distribution of food and agricultural products; to improve the living conditions of the rural population; and to eliminate hunger.

FAO works through a Conference, a Council and Staff. The Conference is the policy-making body in which each member has one vote. It meets every two years and elects the FAO Director General. It arranges funds and initiates programmes to improve the world food and agricultural situation.

The Council consists of 49 member nations elected by the Conference. The General Conference meets every alternate year.

FAO gives technical assistance to fisheries, forestry, nutrition, animal husbandry, poultry, irrigation, soil and water management, horticulture, dairying, seed production etc. (Headquarters: Rome; Director General: Jacques Diouf)

United Nations Educational, Scientific and Cultural Organisation (UNESCO): Established on November 4, 1945, the purpose of UNESCO is to contribute to peace and security by promoting collaboration among nations through education, science and culture in order to further justice, rule of law, and human rights and freedoms without distinction of race, sex, language or religion. The USA withdrew from the UNESCO on December 31, 1984 and the UK did in exactly one year after. It is governed by a General Conference, an Executive Board and a Secretariat. The General

Conference consists of representatives from every member State and holds meetings every two years. The Executive Board supervises activities on behalf of the General Conference. The Secretariat works under a Director General with an international staff and is responsible for executing the programmes.

UNESCO conducts conferences and smaller meetings on special subjects; gives assistance to non-governmental organisations and publishes books on a wide range of topics. The idea is to promote international intellectual cooperation. (Headquarters : Paris; Director General : Koichiro Matsuura)

World Health Organisation (WHO): Established on April 7, 1948. The main organs of WHO are the World Health Assembly, Executive Board, six Regional Committees and the Secretariat. The World Health Assembly is the supreme governing body which meets annually. It determines the policies and programmes of WHO and prepares its Budget.

It aims at promoting the health of all people and works for eliminating diseases. It assists member countries in their efforts to improve their national public health services and standards of health. It encourages medical research

WHO unifies, codifies, standardises and transmits data and information concerning health statistics, biological standardisation, public health and laboratory methods through official and technical publication.

WHO has expert committees, study group, regional and inter-regional technical conferences, seminars, teaching missions, and training courses and centres. It provides experts, consultants, professors and lecturers and awards fellowships. WHO has successfully campaigned for the eradication of malaria, tuberculosis and smallpox.

Further, WHO has been designated as the lead agency in the United Nations system to eradicate the dreaded disease Acquired Immuno Deficiency Syndrome (AIDS). In close collaboration with UNDP and the pharmaceutical industry, it is striving hard to develop vaccines and drugs to checkmate its spread. (Headquarters : Geneva; Director General : Ms. Gro Harlem Brundtland)

World Bank: The World Bank is a group of four institutions: The International Bank for Reconstruction and Development (IBRD), established in 1945; the International Finance Corporation (IFC) established in 1956; the International Development Association (IDA), established in 1960; and the Multilateral Investment Guarantee Agency (MIGA), established in 1988.

International Bank for Reconstruction and Development (IBRD): Conceived at the Bretton

Woods Conference in July 1944, the Bank came into being on December 27, 1945. However, its operations began on June 25, 1946. The Bank aims to help in reconstruction and development of economies of members by facilitating investment of capital; promoting foreign investment and supplementing private investment by providing loans for productive purposes out of its capital funds raised by it and its other resources; and to promote growth of international trade and equilibrium in balance of payments. Its membership in June 1993 comprised of 175 nations. (Headquarters : Washington, D.C.; President : James Wolfensohn)

International Development Association (IDA): Established on September 24, 1960, IDA is an affiliate of the World Bank and has the same officers and staff as the Bank. It concentrates its assistance on those countries with an annual per capita gross national product of less than \$520 (1975 rate). Its main object is to help the underdeveloped countries in the task of raising their living standards. (Headquarters: Washington, D.C.)

International Finance Corporation (IFC): An affiliate of the World Bank, IFC came into force on July 20, 1956. It aims at further economic development by encouraging productive private enterprise in its member countries, particularly in the less developed areas. It is empowered to invest in private enterprises in association with private investors, and without government guarantee of repayment in cases where sufficient private capital is not available on reasonable terms; and to bring together private capital and experienced management (Headquarters: Washington, D.C.)

Multilateral Investment Guarantee Agency: The Multilateral Investment Guarantee Agency (MIGA) was formally set up in April 1988. By March 1992, 77 countries had become its members, and an additional 35 were in the process of joining, having already signed the MIGA Convention. MIGA helps money to flow from private investors to developing countries even during war and civil disturbances. It does this by providing insurance to those who invest money in these countries. MIGA also provides insurance to these investors if they run the risk of being dispossessed of their assets. MIGA provides consultancy and advisory services also.

World Meteorological Organisation (WMO): The convention which created the WMO was adopted at the Conference of Directors of the International Meteorological Organisation held in Washington DC in 1947 and came into force on March 23, 1950.

WMO aims to facilitate worldwide cooperation to establish a network of stations and centres.

for providing meteorological services and observations. It aims to promote the establishment of systems for quick exchange of weather information.

WMO encourages the application of meteorology to aviation, shipping, agriculture and other humanistic activities for economic development. It also promotes research and training in meteorology. It has recommended the establishment of a World Weather Watch (WWW) based on meteorological satellites and a system of world and regional centres. It has also started an international programme for research in the light of developments in outer space.

The World Meteorological Congress meets once in four years. It adopts technical regulations on meteorological practices and procedures. The Executive Council of 24 members, meets at least once a year. The Secretariat is headed by a Secretary General. (Headquarters: Geneva)

International Maritime Organisation (IMO): Established on March 17, 1958. IMO's objectives are to provide a machinery for cooperation and exchange of information among governments on technical matters affecting shipping; to ensure the achievement of the highest practicable standards of maritime safety and efficient navigation. IMO has a special responsibility for safety of life at sea.

IMO also aims at removing discriminatory actions and unnecessary restrictions by governments. IMO considers matters concerning shipping when referred to it by the UN.

IMO functions in a consultative and advisory capacity. The IMO Assembly consisting of all members, meets every two years and is the policy-making body. (Headquarters: London)

General Agreement on Tariffs and Trade (GATT): It was negotiated in 1947 and entered into force on January 1, 1948. It is the only treaty setting rules for world trade. Its functions are to ease trade barriers and establish rules of fair trade. In recent years, GATT has made special efforts to develop international trade and has also given particular emphasis to increase the export trade of developing countries. (Headquarters: Geneva)

United Nations Children's Fund (UNICEF): Established in 1946, it is the only distinctive inter-governmental organisation concerned with children's welfare. Supported entirely by voluntary contributions from governments and individuals, UNICEF helps children all over the world. It is governed by a 30-nation executive board designated by the Economic and Social Council. (Headquarters: New York; Executive Director: Ms. Carol Bellamy)

United Nations Development Programme (UNDP): It helps developing countries increase the

wealth-producing capabilities of their natural and human resources by providing experts or training of the local people. (Headquarters: New York; Director General: Mark M. Brown)

United Nations Environment Programme (UNEP): Established in 1972, it provides machinery for international cooperation in matters relating to the human environment. (Headquarters: Nairobi)

United Nations Fund for Population Activities (UNFPA): It was set up in 1967. It aims at promoting population programmes and in extending systematic and sustained population assistance to developing countries and helps them in dealing with their population problems. (Headquarters: New York; Executive Director: Ms. Nafis Sadik)

United Nations High Commissioner for Refugees (UNHCR): Established in 1950, the office of High Commissioner for Refugees aims at providing international protection for refugees and seeks permanent solution to their problems through voluntary repatriation, migration to other countries or local integration, besides undertaking special humanitarian tasks. The office of the UNHCR was the recipient of the Nobel Peace Prize for 1981. It was the second time the Geneva-based UN agency won the coveted Peace Prize. It was awarded the 1954 prize for resettling European refugees after World War II. (Headquarters: Geneva)

United Nations Industrial Development Organisation (UNIDO): UNIDO was established as an organ of the General Assembly in 1967. It promotes industrialisation in less developed countries with particular emphasis on the manufacturing sector.

UNIDO programmes also include Special Industrial Service (SIS) designed to supplement other assistance. UNIDO helps solve urgent industrial problems at short notice, and on flexible terms.

However, according to a newly formulated strategy, five priority areas on behalf of UNIDO have been fixed in response to the needs and demands of developing countries. These are strengthening of national capacity and effectiveness, particularly in human resource development, promotion of international competitiveness in industry, more effective international industrial cooperation in the promotion of foreign investment and technological transfer as well as in regional and sub-regional cooperation, development rehabilitation and promotion of the private sector especially small-scale industry, and lastly ecologically sustainable industrial development. (Headquarters: Vienna, Director General: Mauricio Maria J. Campos)

International Monetary Fund (IMF): It was established on December 27, 1945 but the Fund began operations on March 1, 1947. It aims at promoting international monetary cooperation and expansion of international trade; promoting exchange stability and avoiding competitive exchange depreciations; assisting in the establishment of multilateral system of payment in respect of currency transactions between members and in the elimination of foreign restrictions. IMF has a Board of Governors, Executive Directors and a Managing Director. All powers of the Fund are vested in the Board. It may delegate any of its powers to the Executive Directors, except the power to admit or suspend members, approve a revision of quota or a uniform change in the par value of members' currencies, determine the distribution of the Fund's net income and decide to liquidate the Fund.

The Executive Directors are responsible for the operation of the Fund. The Managing Director is elected by the Executive Directors. He is also the ex-officio Chairman of the Board of Directors and the chief of the operating staff of the Fund. (Headquarters : Washington, D.C.; Managing Director : Michel Camdessus)

International Civil Aviation Organisation (ICAO) : It was established on April 4, 1947, after working as a provisional organisation since June 1945. Its purpose is to study problems of international civil aviation and establish international standards and regulations. It promotes safety of international civil aviation, provides statistical and economic information for governments and airlines, works to reduce the red tape of customs formalities, and helps developing countries benefit from air transport.

ICAO encourages the use of safety measures, uniform regulations and use of new technical methods and equipment. It has evolved a pattern for meteorological services, better traffic control, communications, radio beacons and ranges, search and rescue operations and other facilities required for safe international flights.

ICAO lends technical assistance, especially to developing nations to train personnel in civil aviation. It has simplified customs, immigration and public health regulations as they apply to international air transport. ICAO is responsible for drafting international air conventions and the economic aspects of international air transport.

The ICAO Assembly, composed of delegates from 183 member countries meets once in three years. The ICAO Council, composed of 30 members, elected by the Assembly, is the executive body of the organisation. It carries out the

Assembly's directives and administers the finances of ICAO.

The Council elects its President and Secretary General. (Headquarters: Montreal)

Universal Postal Union (UPU): Established on October 9, 1874, it became specialised agency of UN in 1947. UPU aims at forming a single postal territory of countries for exchange of correspondence, organising and improving postal services and promoting international collaboration. Thus, members agree to send the mail of all other members by the best means used for sending their own mail. UPU makes provision for international postal services.

The principal organs of UPU are the Universal Postal Congress (UPC), the Executive Council, the Consultative Committee for Postal Studies and the International Bureau.

The Universal Postal Congress is composed of all 188 UPU member countries and usually meets at intervals of five years. Extraordinary Congress may be held at the request of a two-third majority of the members.

The Executive Council consists of 40 members, elected by the Congress on an equal geographical basis, maintaining close contact with the postal administration.

The Consultative Committee for Postal Studies consists of 35 members. The committee organises studies on major problems affecting postal administration in all UPU countries. It also gives advice on technical, operational and economic fields to improve postal conditions all over the world.

The International Bureau is the Secretariat of UPU and is responsible for postal administration, liaison, information and consultation. (Headquarters : Berne)

International Telecommunication Union (ITU): ITU was founded in 1865 in Paris, as the International Telegraph Union. It was reorganised in 1947 and entered into an agreement with the UN, whereby it was recognised as the specialised agency for telecommunications.

ITU is responsible for regulating, co-ordinating and planning all types of international telecommunication, including space communication. ITU promotes the improvement, extension and rational use of telecommunication services of telephone, telegraph, space and aeronautical telecommunication, broadcasting and television with a view to making them generally available to all countries.

ITU is particularly concerned with the development of new techniques such as space communication. It endeavours to promote standardisation in telecommunication. It fosters the

creation, development and improvement of telecommunications in newly independent and developing countries. Through international conferences and meetings, publication of technical information and extending technical cooperation, ITU works to fulfil its aims and objectives. (Headquarters : Geneva)

Economic and Social Commission for Asia and the Pacific (ESCAP): Earlier known as Economic Commission for Asia and the Far East (ECAFE), the ESCAP is a regional commission of the UN Economic and Social Council. The Commission seeks to promote economic development of Asia and Far East countries by promoting better social, economic, education and health conditions of the countries in this region. ESCAP's golden jubilee session was held in New Delhi in April 1994. (Headquarters : Bangkok)

World Intellectual Property Organisation (WIPO): The convention establishing WIPO was signed in Stockholm in 1967 and came into force three years later. WIPO became a specialised agency of the UN in December 1974.

Membership of WIPO is open to any State which is a member of the UN or is invited to join it by the General Assembly of WIPO. The General Assembly

of WIPO consists of all 147 member States. It appoints a Director General and reviews and approves his reports. It adopts the triennial Budget.

The objectives of WIPO are to protect intellectual property throughout the world; to ensure administrative cooperation among the unions established by various treaties for the protection of intellectual property.

The convention provides legal-technical assistance at the request of States. WIPO performs the administrative tasks of international treaties, dealing with Intellectual Property. It gathers and disseminates information concerning the protection of Intellectual Property. (Headquarters: Geneva)

International Fund for Agricultural Development (IFAD): Established in December 1977, the IFAD is a \$ one billion fund which is used for raising food production in developing countries, employing poor and landless farmers, and reducing malnutrition in the Third World countries. The fund is a major joint project of the industrialised countries, the petroleum exporting developing countries and the recipient developing countries. The industrialised nations have made a contribution of \$600 million and the OPEC nations \$400 million to this fund. (Headquarters: Rome)

3. The Commonwealth

Commonwealth: The Commonwealth, originally called the British Commonwealth of Nations, is an association of 54 nations and dependencies loosely joined by a common link based on having been parts of the old British empire. The British monarch is the symbolic head of the Commonwealth. By tacit agreement, the name British Commonwealth of Nations has been shortened to the Commonwealth. The Commonwealth is an evolving organisation. Almost all Britain's former colonies and dependencies have attained independence in a generally smooth and orderly manner, and these countries make up the family of Commonwealth Member nations as on November 1, 1999 were Antigua and Barbuda (1981), Australia (1931), Bahamas (1973), Bangladesh (1972), Barbados (1966), Belize (1981), Botswana (1966), Britain (1931), Brunei (1984), Cameroon (1995), Canada (1931), Cyprus (1961), Dominica (1978), Fiji Islands (1997), Gambia (1965), Ghana (1957), Grenada (1974), Guyana (1966), India (1947), Jamaica (1962), Kenya (1963), Kiribati (1979), Lesotho (1966), Malawi (1964), Malaysia (1957), Maldives (1982), Malta (1964), Mauritius (1968),

Mozambique (1995), Namibia (1990), Nauru (1968), New Zealand (1931), Nigeria (1960), Pakistan (1989), Papua New Guinea (1975), St. Kitts and Nevis (1983), St. Lucia (1979), St. Vincent and the Grenadines (1979), Samoa (1970), Seychelles (1976), Sierra Leone (1961), Singapore (1965), Solomon Islands (1978), South Africa (1994), Sri Lanka (1948), Swaziland (1968), Tanzania (1961), Tonga (1970), Trinidad and Tobago (1962), Tuvalu (1978), Uganda (1982), Vanuatu (1980), Zambia (1964) and Zimbabwe (1980).

Nigeria and Pakistan were suspended because of military takeover in these countries in 1995 and October 1999 respectively.

The Commonwealth is the only international grouping outside the United Nations to form a microcosm of the world community by bringing together developed and developing countries from across the globe. Commonwealth members belong to other international bodies, regional political and economic, as well as to the world assembly of the United Nations. Yet in all the international relationships, the Commonwealth is

link between them and complements other forms of cooperation.

Membership of the Commonwealth is compatible with the freedom of member governments to be non-aligned or to belong to any other grouping, association or alliance. Within this diversity, all members of the Commonwealth hold certain principles in common. It is by pursuing these principles that the Commonwealth is able to influence international society for the benefit of mankind.

The Commonwealth Secretariat is an international body at the service of all member countries. It provides the central organisation for joint consultation and cooperation in many fields. It disseminates information on matters of common concern, organises services, meetings and conferences, coordinates Commonwealth activities and provides expert technical assistance for economic and social development through the multilateral Commonwealth Fund for Technical Cooperation.

The Secretariat organises biennial meetings of Commonwealth Heads of Government, annual

meetings of Finance Ministers of member countries and regular meetings of Ministers of Education, Law, Health and others as appropriate. The meetings are held in different cities and regions within the Commonwealth.

The Commonwealth Heads of Governments Meet—CHOGM, has now acquired international significance. India hosted the 24th Commonwealth summit at New Delhi in 1983, which was presided over by the then Prime Minister, Mrs. Indira Gandhi. The 25th summit was held in Nassau, the capital of Bahamas, in 1985. Canada hosted the 26th summit in 1987 at Vancouver. The 27th summit was held in Kuala Lumpur (Malaysia) in October 1989, the 28th in Harare (Zimbabwe) in October 1991 and the 29th in Limassol (Cyprus) in October 1993. The 30th CHOGM was held in Auckland (New Zealand) in November 1995. The 31st Summit was held in Edinburgh (Scotland) in October, 1997. South Africa will host the 32nd Summit of CHOGM in 1999.

Secretary-General : Emeka Anyaoku.

Headquarters : London.

4. The Non-Aligned Movement (NAM)

The NAM, which is a movement of the Third World countries, is an alternate bloc of nations which aimed at keeping these countries away from the Super Power rivalry Based on the principles of *Panch Sheel* as enunciated by the late Indian Prime Minister, Jawaharlal Nehru, at a conference at Bandung (Indonesia) in April 1955, the Non-Aligned Movement was born in September 1961 with the first summit meeting of the non-aligned countries at Belgrade in Yugoslavia. President Tito of Yugoslavia, Prime Minister Nehru of India and President Nasser of Egypt were the founding fathers of the movement. Among the other founder members of the NAM were Archbishop Makarios of Cyprus, U Nu of Burma, President Sukarno of Indonesia, Kwame Nkrumah of Ghana, Emperor Haile Selassie of Ethiopia, and King Mahendra Bir Bikram Shah of Nepal. The basic principles of Non-Aligned Movement are to keep away, as far as possible, from the power blocs or the group of countries aligned against each other, to keep close terms of friendship with all countries and to have friendship and cooperation with both America as well as the Russia. The NAM meetings discuss problems of mutual interest and exchange views on issues facing the world at large.

The first meeting of NAM was attended by 25 member countries, viz, Afghanistan, Algeria, Burma, Cambodia (Kampuchea), Ceylon (Sri Lanka), Congo (Zaire), Cuba, Cyprus, Ethiopia, Ghana, Guinea, India, Indonesia, Iraq, Lebanon, Mali, Morocco, Nepal, Somalia, Sudan, Tunisia, Egypt, Syria, Yemen and Yugoslavia. With the emancipation of more nations from the colonial yoke, the NAM gained wide acceptance and now it has 108 members, besides guests and observers who are invited to these meetings. The NAM celebrated its Silver Jubilee at its meeting at Harare in 1986. Despite the over fourfold enlargement in its membership, the NAM has retained its basic thrust in favour of world peace, disarmament, development and freedom. The summit meetings of NAM held so far are Belgrade (Yugoslavia), 1961; Cairo (Egypt), 1964; Lusaka (Zambia), 1970; Algiers (Algeria) 1973; Colombo (Sri Lanka, 1976; Havana (Cuba), 1979; New Delhi (India), 1983; Harare (Zimbabwe), 1986; Belgrade (Yugoslavia), 1989; Jakarta (Indonesia), 1992 and Cartagena (Colombia), 1995; New Delhi (India), 1997; and Durban (South Africa), 1998. (President : Thabo Mbeki of South Africa)

5. South Asian Association for Regional Cooperation (SAARC)

The first South Asian summit held in Dhaka (Bangladesh) in December 1985, culminated in the formation of the South Asian Association for Regional Cooperation. Describing it as the 'beginning of a new dawn', the then Prime Minister Rajiv Gandhi said that the SAARC points the way to collective self-reliance in order to overcome problems of poverty, illiteracy, malnutrition and disease in this area. SAARC has seven member States, viz., India, Bangladesh, Pakistan, Sri Lanka, Bhutan, Nepal and Maldives. The charter of SAARC provides annual meetings of the Heads of States and Governments and a six-monthly meeting of a Council of Ministers, which is the organisation's highest policy-making body. Beginning with the historic summit at Dhaka (Bangladesh) in

December 1985, such summits have been smoothly organised every year. The second summit was held at New Delhi in 1986, the third at Kathmandu (Nepal) in 1987, the fourth at Islamabad (Pakistan) in 1988, the fifth at Male (Maldives) in 1990, the sixth at Colombo (Sri Lanka) in 1991, the seventh in Dhaka (Bangladesh) in 1993, the eighth in New Delhi in May 1995 and the ninth in Male (Maldives) in May 1997.

A permanent secretariat of the SAARC has been set up at Kathmandu in Nepal. The chairmanship of the organisation remains with the country which had hosted the last summit and is transferred to the new host at the time of the next summit. (Secretary General: Nihal Rodrigo)

6. Other International Organisations

French Community: The French Community was created in the 1958 French Constitution and modified by later amendment. It is an association of France, its overseas departments and territories, six African republics (former possessions) and one Condominium (New Hebrides). France aids members in construction of roads, rail-roads, etc., and in improvement of agricultural production, health and education.

North Atlantic Treaty Organisation (NATO): NATO was created on April 4, 1949, in a treaty signed in Washington, by Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the USA. Greece, Turkey and West Germany have also joined. Spain joined the organisation on May 30, 1982 as the 16th member. Czech Republic Hungary and Poland are the latest entrants to NATO (1999). The members agreed to settle disputes by peaceful means; to develop their individual and collective capacity to resist armed attack; to regard an attack on one as an attack on all and to take necessary action to repel it under Article 51 of the UN Charter.

NATO Council meetings may consist of Heads of Government, Cabinet Ministers or permanent NATO representatives, who hold the rank of ambassador. The military committee is composed of the chiefs of staff of the member countries and permanent representatives.

Armed forces of NATO members include forces assigned to NATO commands, forces earmarked for NATO commands and forces under national command. There is a Supreme Allied Commander Europe (SACEUR), a Supreme Allied Commander Atlantic (SACANT), a Channel Committee and Allied Command Channel (covering the English Channel and Southern North Sea) and a Canada-US Regional Planning Group. This western military alliance has on January 10, 1994 opened the doors to membership for East European states. USA has decided to invite Poland, Hungary & Czech Republic to become members of NATO, to begin with. Meanwhile, Russia, too, forced by exigencies of 'realpolitik' for revitalising its economy with western assistance has signed the NATO Pact, opening way for its erstwhile allies in eastern & central Europe to join NATO on May 12, 1997 at Paris. (Headquarters: Brussels, Belgium, Secretary General: George Robertson)

European Economic Community (EEC): Popularly known as the Common Market, the EEC, established on January 1, 1958, is a bloc of 12 adjacent West European industrial nations which through a network of agreements are seeking to pool their economies, while retaining their separate national identities. Their ultimate goal is a complete customs union with free flow of goods, services and labour among all members. Its members are Belgium, France, Germany, Italy, Luxembourg, the

Netherlands, Britain, Denmark and Ireland. Greece had joined as 10th member. Spain and Portugal have also joined the Community as 11th and 12th members. (Headquarters : Brussels, Belgium)

European Free Trade Association: (EFTA): EFTA was formed in January 1960 as a limited version of EEC, with its main goal of gradual reduction of customs duties and quantitative restrictions on industrial goods among members. By December 31, 1966 all tariffs and quotas have been eliminated. Its member nations are Austria, Finland, Iceland, Norway, Sweden and Switzerland. Two founder members, the U.K. and Denmark, left EFTA on December 31, 1972 to join the European Community. Portugal did so in 1985. (Headquarters : Geneva, Switzerland).

European Space Agency : The ESA is an organisation of European countries that engages in space research and technology. It was founded in 1975 and the members are Austria, Belgium,

Iraq (which withdrew in 1959). In 1958, the US signed a declaration of collective security to cooperate with the member states. CENTO was known as the Baghdad Pact until 1958, when its headquarters were moved to Ankara, Turkey. Iran and Pakistan withdrew in 1979. (Headquarters : Ankara, Turkey). It is now a defunct treaty.

Warsaw Treaty Organisation (Warsaw Pact): Warsaw Treaty Organisation was created on May 14, 1955 as a 20-year mutual defence alliance by Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania and the erstwhile USSR. It provided for unified military command with headquarters in Moscow; if one member was attacked, the others would aid with all necessary steps including armed force; joint manoeuvres were held; there was a political consultative committee and economic co-operation was advanced. Also known as F. European Mutual Assistance Treaty, th

Association of South-East Asian Nations (ASEAN): The ASEAN was formed on August 8, 1967 by Indonesia, Thailand, the Philippines, Malaysia and Singapore to promote active collaboration and mutual assistance in matters of common interest in the economic, social, cultural, technical, scientific and administrative fields. Brunei joined in 1984. Vietnam was admitted as the seventh member followed by Laos and Myanmar. Cambodia whose membership was held in abeyance because of internal strife for power was finally admitted to ASEAN on April 30, 1999. To bring the total membership of ASEAN to 10. India attended the annual ASEAN meeting held in Jakarta in July 1996 for the first time with the status of a "Dialogue Partner". (Headquarters : Jakarta, Indonesia; Secretary General : Ajit Singh)

Organisation of Economic Cooperation and Development (OECD): Established on September 30, 1961, it aims at encouraging world trade and economic progress and aid underdeveloped nations. The OECD superseded the Organisation for European Economic Co-operation which had been established under the Marshall Plan in 1948. Present members are : Australia, Austria, Belgium, Canada, Denmark, Finland, France, West Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, U.K. and USA (Headquarters : Paris, France; General Secretary : General Donald Johnston).

Organisation of Petroleum Exporting Countries (OPEC): The organisation was formed on November 14, 1960 to control production and pricing of crude oil. It has been successful in determining world oil prices and in advancing members' interests in trade and development dealings with industrialised oil-consuming nations. Membership is open to any country having substantial net exports of crude petroleum, which has fundamentally similar interests to those of member countries. Its members in 1988 were: Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela. (Headquarters : Vienna, Austria; President : Erwin Jose Arieta)

Organisation of Arab Petroleum Exporting Countries : The OAPEC was established in 1958 to safeguard the interests of its members and encourage cooperation in economic activity within the petroleum industry. Its members are Algeria, Bahrain, Egypt, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, Syria and the United Arab Emirates. (Headquarters : Kuwait)

Andean Group: It was formed on October 16, 1969 to end trade barriers among member nations

and create a common market. Its present members are Bolivia, Colombia, Ecuador, Peru and Venezuela. (Headquarters : Lima, Peru)

ANZUS Council: Formed in 1951, it is a loose military alliance which is pledged to respond to aggressions against any of its members. Its members are: Australia, New Zealand and the United States. (Headquarters : Canberra, Australia)

BENELUX Economic Union: It was established in 1958 with a view to achieve complete economic union of its members. The member nations are: Belgium, the Netherlands and Luxembourg. (Headquarters : Brussels, Belgium)

Colombo Plan: It was established on July 1, 1951 for cooperative economic development in South and South East Asia as a result of a meeting of Commonwealth Foreign Ministers held in 1950. It seeks to improve the living standards of the people of the area by reviewing development plans and coordinating development assistance. Aid to member countries is negotiated and administered bilaterally. Its membership comprises 20 developing countries within the region (Afghanistan, Bangladesh, Bhutan, Burma, Fiji, India, Indonesia, Iran, Kampuchea, Republic of Korea, Laos, Malaysia, Republic of the Maldives, Nepal, Pakistan, Papua New Guinea, Philippines, Singapore, Sri Lanka and Thailand) and six non-regional members (Australia, Canada, Japan, New Zealand, the United Kingdom and the United States). (Headquarters : Colombo, Sri Lanka)

International Committee of the Red Cross (ICRC): Established in 1863, the ICRC organises care for the victims of war and enforces the various conventions on wartime practices. The ICRC constitutes, with the League of Red Cross Societies, the International Red Cross. The League of Red Cross Societies, founded in 1929, has member societies in 126 countries. (Headquarters : Geneva, Switzerland)

International Criminal Police Organisation (Interpol): Formed in 1956, the Interpol ensures maximum cooperation between police authorities, with the strict exclusion of political, military, religious and racial matters. Interpol is a successor to the International Criminal Police Commission which was established in 1923. It acts as a clearing house for information on international criminal matters. The organisation has official police bodies in 122 countries. Interpol was founded with headquarters in Vienna. It was reconstituted after World War II with headquarters in Paris. (Headquarters : Lyons, France)

Group of Eight : G-8 earlier consisted of the seven wealthiest nations of the world : the United States of America, Japan, Germany, France, the U.K., Italy and Canada. However with

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Organisation of American States (OAS): OAS grew out of the Pan American Union, which, with headquarters in Washington, is its general secretariat. OAS (formed at Bogota, Colombia in 1948) has a Council to which each of the member-nations sends a representative. The Council can call meetings of Ministers of Foreign Affairs to make decisions under the Inter-American Treaty of Reciprocal Assistance, formed in Rio de Janeiro in 1947, to which most countries of the western hemisphere belong. There are 32 members, each with one vote on the Council and other organisations. Antigua and Barbuda, Argentina, Bahamas, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St Kitts-Nevis, St Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, USA, Uruguay and Venezuela. In 1962, the OAS excluded Cuba "from participation in the inter-American system", a step motivated by Cuba's "alignment with the Communist bloc" and designed to exclude it from OAS activities but not from membership. Canada held observer status from 1972 and became a full member in 1990 (Headquarters : Washington D.C., U.S.A., Chairman : Cesar Gaviria).

Central Treaty Organisation (CENTO): The organisation was created in 1955 to provide a defence shield on the northern tier of the Middle East against Soviet penetration. Its original members were Turkey, Iran, U.K., Pakistan and

Iraq (which withdrew in 1959). In 1958, the US signed a declaration of collective security to cooperate with the member states. CENTO was known as the Baghdad Pact until 1958, when its headquarters were moved to Ankara, Turkey. Iran and Pakistan withdrew in 1979 (Headquarters : Ankara, Turkey). It is now a defunct treaty.

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South-East Asia Treaty Organisation (SEATO): SEATO was established on September 8, 1954 by Australia, France, New Zealand, Pakistan, the Philippines, Thailand, the United Kingdom and the US to provide for collective defence and economic cooperation in South-East Asia. Pakistan withdrew from the organisation in 1973 (Headquarters : Bangkok, Thailand). SEATO is no more now.

League of Arab States (The Arab League): The Arab League was created on March 22, 1945 to strengthen member ties and further promote Arab aspirations. In 1980 there were 22 members of the League: Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen, Southern Yemen and the Palestine Liberation Organisation (Headquarters : Cairo).

Organisation of African Unity (OAU): Formed in May 1963 by 32 African countries, this Pan African Union now consists of all 53 independent African countries, the latest to join is South Africa. OAU has as its goals, the preservation of its members' independence, the elimination of colonialism in Africa, and the development of common scientific, political and economic programmes and policies. (Headquarters : Addis Ababa, Ethiopia; Chairperson : Blaise Compaore)

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Group of Eight : G-8 earlier consisted of the seven wealthiest nations of the world : the United States of America, Japan, Germany, France, the U.K., Italy and Canada. However with the

admission of Russia at G-7 Summit at Denver (June 21, 1997), the Group is now renamed as G-8. The heads of governments of these seven countries meet annually at different venues to discuss economic matters and world political problems.

Group of 77: The 'Group of 77' is an economic group of Third World countries which was founded under the auspices of the UNO in 1964 to protect and defend the economic and trade interests of the developing countries. It comprises 130 developing countries from Asia, Africa and Latin America. The latest to join is South Africa in June 1994.

South Commission: Initially known as South-South Commission, the South Commission, set up by the Non-Aligned Movement, seeks to safeguard the interests of the member countries against the discriminatory practices and policies imposed by the international financial institutions and the creditor governments. (Headquarters : Geneva, Switzerland).

G-15 : G-15, an economic grouping of developing countries which was formed in Malaysia in 1990. The member countries are Algeria, Argentina, Brazil, Egypt, India, Indonesia, Jamaica, Malaysia, Mexico, Nigeria, Peru, Senegal, Venezuela, Yugoslavia and Zimbabwe.

Amnesty International : This organization began on May 28, 1961 with an appeal by the British lawyer Peter Berenson and is now a worldwide human rights organization. This organisation was awarded Nobel Prize for Peace in 1977 and has more than 500,000 members. (Headquarters : London)

Asian Development Bank (ADB): It started functioning in 1966. Initially, it was sponsored by the Economic Commission for Asia and Far East (CAFE). In June 1974, ADB launched the Asian Development Fund (ADF) with a view to providing concessional credits to needy members. (Headquarters : Manila, President : Tadao Chino)

Antarctic Treaty: It is an agreement signed on December 1, 1959 between 12 nations with an interest in Antarctica. These countries are: Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the erstwhile USSR (CIS), the U.K. and the US. In all, 39 countries became party to it by 1990 when Austria, Brazil, Bulgaria, Canada, China, Colombia, Cuba, Czechoslovakia, Denmark, Ecuador, Finland, Germany, Greece, Hungary, India, Italy, South Korea, North Korea, the Netherlands, Papua New Guinea, Peru, Poland, Romania, Spain, Sweden, Switzerland and Uruguay also acceded to the treaty. The treaty reserves the Antarctic area south of 60° south

latitude for peaceful purposes, provides for international cooperation in scientific investigation and research, and preserves, for the duration of the treaty, the status quo with regard to territorial sovereignty, rights and claims. An agreement was reached in Madrid in April 1991 which imposes a ban on mineral exploitation in Antarctica for 50 years.

Asia-Pacific Economic Cooperation Conference : The APEC is a trade group comprising 12 Pacific Asian countries when formed in November 1989 to promote multilateral trade and economic cooperation between member-states. Its present 21 members are Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, the Philippines, Papua New Guinea, Russia, Peru, Singapore, South Korea, Taiwan, Thailand, the United States and Vietnam. The latest APEC Summit was held in Auckland in September 1999.

World Trade Organisation : The WTO came into being on January 1, 1995 when the GATT (General Agreement on Tariffs and Trade) formally transformed itself into this organisation as a major entity overseeing international trade. The WTO was set up as a result of a world trade treaty known as the 'Final Act' (of the Uruguay Round of trade negotiations). The Final Act which was signed at a ministerial conference at Marrakesh in Morocco in April 1994, contains 28 agreements on world trading relations.

WTO administers these agreements through various councils and committees. It is a watch dog of international trade, regularly examining the trade systems of individual members. Its code of conduct includes the principle of non-discrimination between trading partners and equal treatment for imports and domestic goods in internal markets. The WTO is theoretically open to all nations who merely undertake to comply with the rules and accept the obligations. These are, that the member-countries should practise free trade, establish a fixed level of import tariff and finally accept the verdict of the WTO in any dispute with another member-country. (Headquarters : Geneva; Director General : Mike Moore).

World Council of Churches (WCC): The WCC was formally constituted on August 23, 1948 at Amsterdam by an assembly representing 147 countries from 44 nations. By 1989, it had more than 300 churches from over 100 countries as members. (Headquarters : Geneva, Switzerland)

Scouts and Guides: This worldwide organisation was founded by Baden-Powell in 1907. It seeks to inculcate in the boys outdoor skills like scouting, tracking and map-making. The movement's goals include encouraging good

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character, loyalty to God and country, service to other people and physical and mental fitness. Its slogan is: "Be Prepared". A similar movement for girls was later founded in 1910 by Baden-Powell and his sister Agnes. (Headquarters : Geneva, Switzerland)

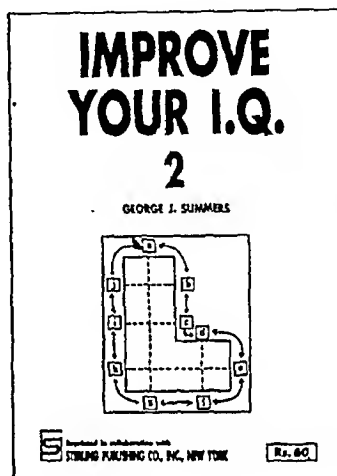
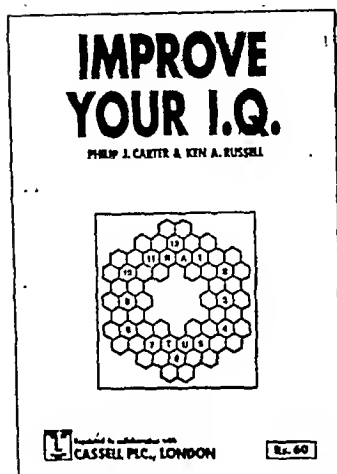
Organisation of Islamic Conference (OIC) :
It was established in May 1971 following a summit meeting of Muslim Heads of States at Rabat (Morocco) in September 1969 and the Islamic Foreign Ministers' Conference in Jeddah in March 1970 and in Karachi in December 1970. With a membership of 54, including the Palestine Liberation Organisation (PLO), the summit meeting of the OIC is held every third year. The organisation aims to promote Islamic solidarity, cooperation in various areas of national development, endeavour to eliminate racism, safeguard holy places and contribute to world peace. In an extra-ordinary summit held in Islamabad recently (March 23, 97) the OIC denounced India and extended support to Pakistan on Kashmir issue. (Headquarters : Mecca, Saudi Arabia; Secretary General : Azzedine Laraki)

Developing 8 or D-8 : This new Association of 8 Muslim nations — Pakistan, Egypt, Iran, Nigeria, Indonesia, Malaysia, Bangladesh and Turkey. constituted in Turkey in June 1997 is intended as a complementary to other regional groupings.

Indian Ocean Rim Association for Regional Cooperation (IOR-ARC) : The 14-member association, aimed at regional economic cooperation comprising members of Indian Ocean Rim Countries such as India, Indonesia, Malaysia, Singapore, Sri Lanka, Australia, Mauritius, Oman, Mozambique, Tanzania, Yemen, South Africa, Madagascar and Kenya, adopted the association's charter and plan of action in its meeting in Port Louis (Mauritius) in March 1997. Despite ethnic diversities, different languages, religions, various phases of economic and political development, etc., there is quite good scope for cooperation such as transfer of technology, technical assistance, economic cooperation, trade facilitation, investment promotion, tourism and infrastructure development in this Rim with a population close to 2 billion people (a third of the world's population), making it a huge market. Apart from the 14-members, several countries such as Pakistan, Bangladesh, Iran, Seychelles, Thailand, Egypt and France are queuing up to join the new bloc.

G-20 : It is a newly-constituted group of 20 countries including 8 members of G-8 which will deliberate world's major economic problems. India has been admitted into the Group in view of its economic strength.

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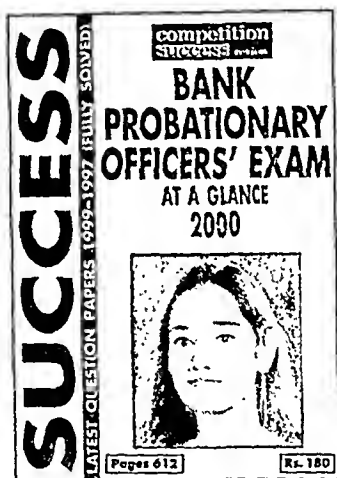
Part VII

Fundamentals Of Sciences

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1. The Sciences

Science is knowledge, often as opposed to intuition, belief, etc. It is, in fact, systematised knowledge derived from observation, study and experimentation carried on in order to determine the nature or principles of what is being studied. There are many sciences, each concerned with a particular field of study. In each science measurement plays an important part. In each science, too, a study is made of the laws according to which objects react. Here are some sciences :

Acoustics: The study of sound (or the science of sound).

Aerodynamics: (i) The branch of mechanics that deals with the motion of air and other gases.

(ii) The study of the motion and control of solid bodies like aircraft, missiles, etc., in air.

Aeronautics: The science or art of flight.

Aeronomy: The study of the earth's upper atmosphere, including its composition, density, temperature, and chemical reactions, as recorded by sounding rockets and earth satellites.

Aerostatics: The branch of statics that deals with gases in equilibrium and with gases and bodies in them.

Aetiology: The science of causation.

Agrobiology: The science of plant life and plant nutrition.

Agronomy: The science of soil management and the production of field crops.

Agrostology: The study of grasses.

Alchemy: Chemistry in ancient times.

Anatomy: The science dealing with the structure of animals, plants or human body.

Anthropology: The science that deals with the origins, physical and cultural development of mankind.

Arboriculture: Cultivation of trees and vegetables.

Archaeology: The study of antiquities.

Astrochemistry: The study of interstellar matter with a view to knowing the origin of universe.

Astrology: The ancient art of predicting the course of human destinies with the help of indications deduced from the position and movement of the heavenly bodies.

Astronautics: The science of space travel.

Astronomy: The study of the heavenly bodies.

Astrophysics: The branch of astronomy concerned with the physical nature of heavenly bodies.

Bacteriology: The study of bacteria

Biochemistry: The study of chemical processes of living things.

Biology: The study of living things

Biometry: The application of mathematics to the study of living things.

Biomechanics: The study of the mechanical laws relating to the movement or structure of living organisms.

Bionics: The study of functional characteristics and phenomena observed in the living world and the application of this knowledge to the world of machines.

Bionomics: The study of the relation of an organism to its environment.

Blonomy: The science of the trees of life.

Biophysics: The physics of living organisms (living things).

Botany: The study of plants

Ceramics: The art and technology of making objects from clay, etc. (pottery).

Chemistry: The study of substances and their laws of combination and behaviour.

Chemotherapy: The treatment of disease by using chemical substances.

Chronobiology: The study of the rhythms of life.

Chronology: The science of arranging events in periods and ascertaining the exact and relative order of past events.

Climatology: The study of climate through suitable climatic measurements. It is not always found in unmodified natural states. As climate is subject to seasonal variations, the required environment may have to be sought in different localities at different periods of the year.

Conchology: The branch of zoology dealing with the shells of mollusks.

Cosmogony: The science of the origin of heavenly bodies.

Cosmography: The science that describes and maps the main features of the universe.

Cosmology: The science of the nature, origin and history of the universe.

Cryobiology: The branch of biology dealing with the study of organisms exposed to low temperatures, the effect of cold on living tissues, the preservation of life or preservation of it at a suspended state of activity.

Cryptography: The study of secret codes and writings.

Crystallography: The study of the structure, forms and properties of crystals.

Cryogenics: The science dealing with the production, control and application of very low temperatures.

Cryotherapy: Use of cold, but not freezing cold, as a form of treatment. Hypothermia may be deliberately induced during surgery, for instance, to decrease a patient's oxygen requirement.

Cytochemistry: The branch of cytology dealing with the chemistry of cells.

Cytogenetics: The branch of biology dealing with the study of heredity from the point of view of cytology and genetics.

Cytology: The study of cells, especially their formation, structure and functions.

Dactylography: The study of fingerprints for the purpose of identification.

Ecology: The study of the relation of animals and plants to their surroundings, animals and in animals.

Econometrics: The application of mathematics in testing economic theories.

Economics: The science dealing with the production, distribution and consumption of goods and services.

Embryology: The study of development of embryos.

Entomology: The study of insects.

Epidemiology: The branch of medicine dealing with epidemic diseases.

Epigraphy: The study of inscriptions.

Ethnography: A branch of anthropology dealing with the scientific description of individual cultures.

Ethnology: A branch of anthropology that deals with the origin, distribution and distinguishing characteristics of the races of mankind.

Ethology: The study of animal behaviour.

Eugenics: The study of the production of better offspring by the careful selection of parents.

Genealogy: The study of family origins and history. It includes the compilation of lists of ancestors and arranging them in pedigree charts.

Genecology: The study of genetic composition of plant population in relation to their habitats.

Genesology: The science of generation.

Genetics: The branch of biology dealing with the phenomena of heredity and the laws governing it.

Geobiology: The biology of terrestrial life.

Geobotany: The branch of botany dealing with all aspects of relations between plants and the earth's surface.

Geochemistry: The study of the chemical composition of the earth's crust and the changes which take place within it.

Geodesy: Methods of surveying the earth for making maps and correlating geological, gravitational and magnetic measurements. It is a branch of geo-physics.

Geography: The development of science of the earth's surface, physical features, climate, population, etc.

Geology: The science that deals with the physical history of the earth.

Geomelafne: The branch of medicine dealing with the influence of climate and environmental conditions on health.

Geomorphology: The study of the characteristics, origin and development of land forms.

Geophysics: The physics of the earth.

Gerontology: The study of old age, its phenomena, diseases, etc.

Glaelogy: The study of ice and the action of ice in all its forms, and therefore including snow.

Histology: The study of tissues.

Horticulture: The cultivation of flowers, fruits, vegetables and ornamental plants.

Hydrodynamics: The mathematical study of the forces, energy and pressure of liquid in motion.

Hydrography: The science of water measurements of the earth with special reference to their use for navigation.

Hydrology: The study of water with reference to its occurrence and properties in the hydrosphere and atmosphere.

Hydrometallurgy: The process of extracting metals at ordinary temperature by leaching ore with liquids.

Hydrometeorology: The study of the occurrence, movement and changes in the state of water in the atmosphere.

Hydrotherapy: The treatment of disease by the internal and external use of water.

Hydroponics: The cultivation of plants by placing the roots in liquid nutrient solutions rather than in soil.

Hydrostatics: The mathematical study of forces and pressures in liquids.

Hygiene: The science of health and its preservation.

Mammography: Radiography of the mammary glands.

Metallotography: The study of the crystalline structures of metals and alloys.

Metallurgy: The process of extracting metals from their ores.

Meteorology: The science of the atmosphere and its phenomena.

Metrology: The scientific study of weights and measures.

Microbiology: The study of minute living organisms, including bacteria, molds and pathogenic protozoa.

Molecular biology: The study of the structure of the molecules which are of importance in biology.

Morphology: The science of organic forms and structures.

Mycology: The study of fungi and fungus diseases.

Neurology: The study of the nervous system, its functions and its disorders.

Neuropathology: The study of diseases of the nervous system.

Numerology: The study of numbers. The study of the date and year of one's birth and to determine the influence on one's future life.

Odontology: The scientific study of the teeth.

Optics: The study of nature and properties of light.

Ornithology: The study of birds.

Orthopedics: The science of prevention, diagnosis and treatment of diseases and abnormalities of musculoskeletal system.

Osteology: The study of the bones.

Osteopathy: A therapeutic system based upon detecting and correcting faulty structure.

Paleobotany: The study of fossil plants.

Paleontology: The study of fossils.

Pathology: The study of diseases.

Pharyngology: The science of the pharynx and its diseases.

Phenology: The study of periodicity phenomena of plants.

Philology: The study of written records, their authenticity, etc.

Phonetics: The study of speech sounds and the production, transmission, reception, etc.

Photobiology: The branch of biology dealing with the effect of light on organisms.

Phrenology: The study of the faculties and qualities of minds from the shape of the skull.

Phthisiology: The scientific study of tuberculosis.

Phycology: The study of algae.

Physical Science: The study of natural laws and processes other than those peculiar to living matters, as in physics, chemistry and astronomy.

Physics: The study of the properties of matter.

Physiography: The science of physical geography.

Physiology: The study of the functioning of the various organs of living beings.

Phytogeny: The science dealing with origin and growth of plants.

Pomology: The science that deals with fruits and fruit growing.

Psychology: The study of human and animal behaviour.

Radio Astronomy: The study of heavenly bodies by the reception and analysis of the radio frequency electro-magnetic radiations which they emit or reflect.

Radiobiology: The branch of biology which deals with the effects of radiations on living organisms.

Radiology: The study of X-rays and radioactivity.

Rheology: The study of the deformation and flow of matter.

Selsmology: The study of earthquakes and the phenomena associated with it.

Selenology: The scientific study of moon, its nature, origin, movement, etc.

Sericulture: The raising of silkworms for the production of raw silk.

Sociology: The study of human society.

Spectroscopy: The study of matter and energy by the use of spectroscopy.

Telemetry: The study of the evidences of design or purpose in nature.

Telepathy: Communication between minds by some means other than sensory perception.

Therapeutics: The science and art of healing.

Topography: A special description of a part or region.

Toxicology: The study of poisons.

Virology: The study of viruses.

Zoology: The study of animal life.

2. Scientific Measures

Ampere: Unit of electric current. It is approximately equal to the flow of 6×10^{18} electrons per second.

Atomic Weight: The weight of an atom of hydrogen is taken as the standard; the respective weights of the atoms of all other

substances are expressed in terms of it. So when it is stated that the atomic weight of iron is 56, it is meant that the atom of iron is 56 times as heavy as the atom of hydrogen.

Angstrom: The unit of wavelength.
Angstrom. 1 Angstrom = 10^{-10} m

bigger unit for measuring the wavelength of Infra-red light; It is called a milli-micron and is equal to 10^{-7} cm. Micron = 10^{-4} cm, is a still bigger unit.

Bar is the unit of atmospheric pressure; one bar is equal to a pressure of 10^6 dynes per sq cm.

Calorie is the unit of heat. It is the amount of heat required to raise the temperature of one gram of water through 1°C .

Horse Power: The practical unit of power—the power of an agent which can work at the rate of 550 foot-pounds per second or 33,000 foot-pounds per minute. $1 \text{ HP} = 746 \text{ watts}$.

Joule is the unit of work or energy. It is equal to 10^7 ergs. It is the energy consumed in one second in an electrical circuit through which a current energy of one ampere is flowing against a potential difference of one volt.

Knot is a measure to know the speed of a ship.

Light Year: A light year is the distance light travels in one mean solar year, at a speed of 1,86,000 miles per second. It is equal to 5,880,000,000,000 miles. It is used as a unit for measuring stellar distances.

Nautical Mile: A unit of distance used in navigation—one minute of longitude measured along the Equator. A Nautical Mile is approximately equal to 6,080 feet.

Pressure: The pressure is expressed in pounds weight per sq cm. The pressure of the atmosphere is expressed in millibars. One millibar = 1 dyne per sq cm. If the pressures are very high, they are expressed in multiples of atmospheric pressure. 1 atmosphere is a pressure exerted by a column of mercury 76 cm high at sea level and at a latitude of 45° .

Quintal: Metric measure of weight; 100 kilograms = 1 quintal.

Volt: The unit of potential difference. It is that much potential difference which when applied to the ends of an electrical conductor of resistance one ohm, the amount of energy consumed in the circuit in one second is one Joule ($=10^7$ ergs).

Watt: Unit of power—the rate of work done in joules per second; the energy expended per second by an unvarying electric current of 1 ampere.

3. Scientific Instruments and Appliances

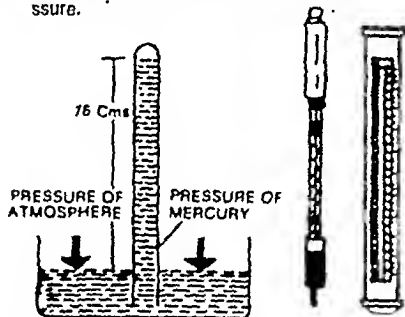
Altimeter is a special type of aneroid barometer, used in measuring altitudes.

Ammeter is an instrument to measure the strength of an electric current.

Anemometer is an instrument to measure the velocity and find the direction of the wind.

Audiometer is an instrument to measure difference in hearing.

Barometer is used for measuring atmospheric pressure.



Binocular is an optical instrument designed for magnified view of distant objects by both eyes simultaneously.

Calorimeter is an instrument for measuring quantities of heat.

Chronometer is a clock to determine longitude of a vessel at sea.

Clinical Thermometer is a thermometer for measuring the temperature of human body.

Colorimeter is an instrument for comparing intensities of colour.

Commutator is an instrument to change or reverse the direction of an electric current. In dynamo, it is used to convert the alternating current into direct current.

Computer is a technical device designed to find instantaneous solutions of huge and complex calculations based on the information already fed.

Crescograph is an instrument for measuring the growth of plants. This was invented by an Indian, Mr. J.C. Bose, a renowned botanist.

Cyclotron is an apparatus for electromagnetic acceleration of charged atoms. It has made possible to make ordinary elements radioactive, leading to production of radioactive isotopes.

Dictaphone is a machine which first records what is spoken into it and then reproduces it in type.

Dynamo is a device for converting mechanical energy into electrical energy.

Dynamometer is an instrument for measuring the electrical power.

Electrocardiograph (ECG) is an instrument used for detection of electric impulses of the heart. It gives a graphic picture of heart beats.

Electroencephalograph (EEG) is an instrument used for recording of change in electric potential in various areas of the brain by means of electrodes on the scalp or in the brain itself.

Electrometer is an instrument for measuring electricity.

Electrophorus is an instrument for generating static electricity by induction.

Electroscope is an instrument for detecting the presence of electric charge.

Eudiometer is a glass tube for measuring volume changes in chemical reactions between gases.

Galvanometer is an instrument for measuring electric current.

Gyroscope is a rapidly rotating heavy wheel that keeps the stability of its axis. It was invented in 1852 to demonstrate the rotation of earth. These days it is used as ship stabiliser.

Hydrometer is an instrument for measuring the relative density of liquids.

Hydrophone is an instrument for measuring sound under water.

Hydroscope is an optical instrument used for seeing objects below the surface of water.

Hygrometer is an instrument for measuring the relative humidity of the atmosphere.

Hygroscope is an instrument to show the changes in atmospheric humidity.

Hypsometer is an instrument to measure the height above sea level. It is an apparatus for determining the boiling point of liquid. Since the boiling points of liquids have a direct relationship with atmospheric pressure and atmospheric pressure with altitude, therefore, the instrument may be used for the determination of altitude above sea level. This instrument is generally used by the mountaineers.

Kymograph is an instrument for recording variations in pressure for example for sound-waves.

Lactometer is an instrument for measuring the relative density of milk.

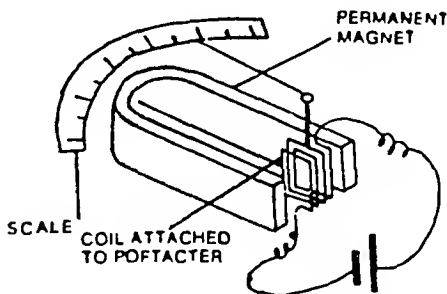
Micrometer is an instrument used for accurately measuring small distances or angles.

Manometer is an instrument to measure the pressure of gases.

Mariner's Compass is an apparatus for determining direction, graduated to indicate 33

directions. The "N" point on the dial indicates north pole and the "S" point, south pole.

Magnetometer is an instrument used to compare the magnetic moments and fields.



Megaphone is an instrument for carrying sound to long distances.

Microphone is an instrument used for converting sound waves into electrical energy which is transmitted through wires and then recovered into sound in a magnified intensity.

Microscope is an instrument for magnified view of very small objects.

Periscope is an apparatus for viewing objects lying above the eye level of the observer and whose direct vision is obstructed. It consists of a tube bent twice at right angles and having plane mirrors at these bends inclined at angles of 45° to the tube.

Photometer is an instrument for comparing the luminous intensity of the sources of light.

Pfanimeter is a mechanical integrating instrument to measure area of a plane surface.

Pyknometer is an instrument used to measure the density and coefficient of expansion of liquid

Pyrhellometer is an instrument for measuring solar radiations.

Pyrometers are thermometers to measure high temperatures.

Quadrant is an instrument for measuring altitudes and angles in navigation and astronomy.

Quartz clock is a highly accurate clock used in astronomical observations and other precision work.

Radar (acronym of radio, angle, direction and range) is used for detecting and finding the range of moving objects by transmitting beams of radio waves.

Radio micrometer is an instrument for measuring heat radiations

Rain gauge is an instrument for measuring rainfall.

Refractometer is an instrument used to measure the refractive index of a substance.

Resistance thermometer is used for determining the electrical resistance of a conductor.

Saltimeter is a type of hydrometer used to determine the concentration of salt solutions by measuring their densities.

Seismograph or Seismometer is an instrument used for recording the intensity and origin of earthquake shocks.

Sextant is an instrument used for measurement of angular distances between two objects.

Spectroscope is an instrument used for spectrum analysis.

Spectrometer is a type of spectroscope so calibrated as to make it suitable for the precise measurement of refractive indices.

Spherometer is an instrument used for accurately measuring the curvature of spherical objects.

Sphygmomanometer is an apparatus for measuring blood pressure.

Spring balance is used to measure the mass of a body. It is preferred only when quick but approximate determinations are to be carried out.

Stereoscope is an optical device to see two dimensional pictures as having depth and solidity.

Stethoscope is a medical instrument for hearing and analysing the sound of heart and lungs.

Stroboscope is an instrument used for viewing the objects moving rapidly with a periodic motion and to see them as if they were at rest.

Tangent galvanometer is an instrument for measuring the strength of direct current.

Tape recorder is an apparatus which records and reproduces sound by using magnetic tapes.

Tefometer is an apparatus for recording physical events happening at a distance.

Telephono is an apparatus used for transmission of sound.

Teleprinter is a communication medium for automatic sending, receiving and printing of telegraphic messages from distant places.

Telescope is an instrument for viewing distant objects as magnified.

Television is an instrument used for transmitting the visible moving images by means of wireless waves.

Tetster is an instrument used for transmitting wireless and television broadcasts across continents via space.

Thermometer is an instrument to measure the temperature.

Thermoscope is used for measuring the temperature change (approximately) of the substance by noting the corresponding change in volume.

Thermostat is an automatic device for regulating constant temperatures.

Transistor is a small device which may be used to amplify currents and perform other functions usually performed by a thermionic valve.

Vernier is an adjustable scale with marking of 10 sub-divisions of one-tenth of an inch or any other suitable markings for measuring small sub-divisions of scale.

Viscometer is an instrument for measuring the viscosity, i.e., the property of resistance of a fluid to relative motion within itself.

Voltmeter is an instrument to measure potential difference between two points.

4. Inventions and Discoveries

Adding Machine, 1642. Inventor: Blaise Pascal (France) (1623-62). Earliest commercial machine invented by William Burroughs (U.S.) in St. Louis, Missouri in 1885.

Addressograph, 1893. Inventor: J.S. Duncan (U.S.). Manufactured in Chicago, Illinois.

Airplane, 1903. Inventors: Orville Wright (1871-1948) and Wilbur Wright (1867-1912) (U.S.). Kitty Hawk, North Carolina.

Airship (non-rigid), 1852. Inventor: Henri Giffard (France) (1825-82). Steam-powered propeller flow over Paris (1852).

Airship (rigid), 1900. Inventor: Graf Ferdinand von Zeppelin (Germany) (1838-1917). Bodensee.

Arc Lamp, 1879. Inventor: C.F. Brush (U.S.) (1849-1929). Cleveland, Ohio.

Argon, 1894. Inventor: Sir William Ramsay and Baron Rayleigh (Great Britain).

Autogiro, 1923. Inventor: Juan de la Cierva (Spain) (1896-1933). Horizontal unpowered rotor.

Automobile (steam), c. 1769. Inventor: Nicolas Cugnot (France) (1725-1804). Three-wheeled military tractor. Oldest surviving is Italian Bordini (1854) in Turin.

Automobile (gasoline), 1885. Inventor: Karl Benz (Germany) (1844-1929). Earliest model by Father Ferdinand Verbiest (d. 1687) c. 1665 in China. Earliest internal combustion automobile

built (1862-63) by Jean Joseph Etienne Lenior (1822-1900) (France). First run, Benz Motorwagon, Mannheim November or December 1885. Patented January 29, 1886. First powered handcart with internal combustion engine was by Siegfried Marcus (Austria) (c. 1864).

Bakelite, 1907. Inventor: Lwo H. Backeland (Belgium/U.S.) (1863-1944).

Balloon, 1783. Inventor: Jacques Montgolfier (1755-99) and Joseph Montgolfier (France) (1740-1810). Tethered flight, Paris (October 15); manned free flight, Paris.

Ballpoint Pen, 1888. Inventor: John J. Loud (U.S.). First practical models by Ladislo and George Biro (Hungary) in 1938.

Barbed Wire, 1873. Inventor: Joseph F. Glidden (U.S.); manufactured at De Kalb, Illinois.

Bicycle Tyres (pneumatic), 1888. Inventor: John Boyd Dunlop (Scotland) (1840-1921). Principle patented but undeveloped by Orbert William Thomson (Scotland), June 10, 1885. First motor car pneumatic tyres adapted by Andre and Edouard Michelin (France), 1885 (see rubber tyres).

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Electric Flat Iron, 1882. Inventor: H.W. Seeley (U.S.), New York City.

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Electric Lamp, 1879. Inventor: Thomas Alva Edison (U.S.) (1847-1931). First practical demonstration at Menlo Park, New Jersey.

Electric Motor (DC), 1873. Inventor: Zenobe Gramme (Belgium) (1826-1901). Exhibited in Vienna.

Electric Motor (AC), 1888. Inventor: Nikola Tesla (U.S.) (1856-1943).

Electromagnet, 1824. Inventor: William Sturgeon (England) (b. 1783), improved by Joseph Henry (U.S.) 1831.

Refractometer is an instrument used to measure the refractive index of a substance.

Resistance thermometer is used for determining the electrical resistance of conductor.

Salinometer is a type of hydrometer used to determine the concentration of salt solutions by measuring their densities.

Seismograph or Seismometer is an instrument used for recording the intensity and origin of earthquake shocks.

Sextant is an instrument used for measurement of angular distances between two objects.

Spectroscope is an instrument used for spectrum analysis.

Spectrometer is a type of spectroscope so calibrated as to make it suitable for the precise measurement of refractive indices.

Spherometer is an instrument used for accurately measuring the curvature of spherical objects.

Sphygmomanometer is an apparatus for measuring blood pressure.

Spring balance is used to measure the mass of a body. It is preferred only when quick but approximate determinations are to be carried out.

Stereoscope is an optical device to see two dimensional pictures as having depth and solidity.

Stethoscope is a medical instrument for hearing and analysing the sound of heart and lungs.

Stroboscope is an instrument used for viewing the objects moving rapidly with a periodic motion and to see them as if they were at rest.

Tangent galvanometer is an instrument for measuring the strength of direct current.

Tape recorder is an apparatus which records and reproduces sound by using magnetic tapes.

Telemeter is an apparatus for recording physical events happening at a distance.

Telephone is an apparatus used for transmission of sound.

Teleprinter is a communication medium for automatic sending, receiving and printing of telegraphic messages from distant places.

Telescope is an instrument for viewing distant objects as magnified.

Television is an instrument used for transmitting the visible moving images by means of wireless waves.

Telstar is an instrument used for transmitting wireless and television broadcasts across continents via space.

Thermometer is an instrument to measure the temperature.

Thermoscope is used for measuring the temperature change (approximately) of the substance by noting the corresponding change in volume.

Thermostat is an automatic device for regulating constant temperatures.

Transistor is a small device which may be used to amplify currents and perform other functions usually performed by a thermionic valve.

Vernier is an adjustable scale with marking of 10 sub-divisions of one-tenth of an inch or any other suitable markings for measuring small sub-divisions of scale.

Viscometer is an instrument for measuring the viscosity, i.e., the property of resistance of a fluid to relative motion within itself.

Voltmeter is an instrument to measure potential difference between two points.

4. Inventions and Discoveries

Adding Machine, 1642. Inventor: Blaise Pascal (France) (1623-62). Earliest commercial machine invented by William Burroughs (U.S.) in St Louis, Missouri in 1885.

Addressograph, 1893. Inventor: J.S. Duncan (U.S.). Manufactured in Chicago, Illinois.

Airplane, 1903. Inventors: Orville Wright (1871-1948) and Wilbur Wright (1867-1912) (U.S.) Kitty Hawk, North Carolina.

Airship (non-rigid), 1852. Inventor: Henri Giffard (France) (1825-82). Steam-powered propeller flew over Paris (1852).

Airship (rigid), 1900. Inventor: Graf Ferdinand von Zeppelin (Germany) (1838-1917). Bodensee.

Arc Lamp, 1879. Inventor: C.F. Brush (U.S.) (1849-1929). Cleveland, Ohio.

Argon, 1894. Inventor: Sir William Ramsay and Baron Rayleigh (Great Britain).

Autogiro, 1923. Inventor: Juan de la Cierva (Spain) (1896-1963). Horizontal unpowered rotor.

Automobile (steam), c. 1769. Inventor: Nicolas Cugnot (France) (1725-1804). Three-wheeled military tractor. Oldest surviving is Italian Bordini (1854) in Turin.

Automobile (gasoline), 1855. Inventor: Karl Benz (Germany) (1844-1929). Earliest model by Father Ferdinand Verbiest (d. 1687) c. 1665 in China. Earliest internal combustion automobile

built (1862-63) by Jean Joseph Etienne Lenior (1822-1900) (France). First run, Benz Motorwagon, Manneheim November or December 1885. Patented January 29, 1886. First powered handcart with internal combustion engine was by Siegfried Marcus (Austria) (c. 1864).

Bakelite, 1907. Inventor: Lwo H. Backeland (Belgium/U.S.) (1863-1944).

Balloon, 1783. Inventor: Jacques Montgolfier (1755-99) and Joseph Montgolfier (France) (1740-1810). Tethered flight, Paris (October 15); manned free flight, Paris.

Ballpoint Pen, 1888. Inventor: John J. Loud (U.S.). First practical models by Ladisloa and George Biro (Hungary) in 1938.

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Electromagnetic Induction, 1831. Inventor: Michael Faraday (Great Britain); discovered previously, but not published, by Joseph Henry (United States).

Electronic Computer, 1942. Inventor: J.G. Brainerd, J.P. Eckert, J.W. Mauchly (U.S.). ENIAC (Electronic Numerical Integrator and Calculator), University of Pennsylvania, Philadelphia.

Elevator, 1852. Inventor: Elisha G. Otis (U.S.) (1811-61). Earliest elevator at Yonkers, N.Y.

Film (musical), 1923. Inventor: Dr. Lee de Forest (U.S.) New York demonstration (March 13).

Film (talking), 1926. Inventor: Warner Bros. (U.S.). First release Don Juan, Warner Theatre, New York (August 5).

Fluorine, 1886. Inventor: Henri Moissan (France).

Fountain Pen, 1884. Inventor: Lewis E. Waterman (U.S.) (1837-1901). Patented by D. Hyde (U.S.), 1830, undeveloped.

Gas Lighting, 1792. Inventor: William Murdoch (Scotland), (1754-1839). Private house in Cornwall, 1792; Factory, Birmingham, 1798; London Street, 1807.

Generator, 1860. Inventor: Picinotti (Italian). Continuous current: Improved by Gramme (Belgium), 1870.

Glass (stained), c. 1080. Inventor: Augsburg (Germany). Earliest English, c. 1170, York Minister.

Glassware, c. 1500 BC. Inventor: Egypt and Mesopotamia. Glass blowing, Syria, c. 50 BC.

Glider, 1853. Inventor: Sir George Cayley (England) (1773-1857). Near Brompton Hall, Yorkshire, England Passenger possibly John Goby.

Gyro-Compass, 1911. Inventor: Elmer A. Sperry (U.S.) (1860-1930). Tested on USS Delaware (August 28). Gyroscope devised 1882 by Foucault (France).

Helicopter, 1930. Inventor: d'Ascanio (Italy). Co-axial machine. Earliest drawing of principle, Louvre Museum, France, c. 1460. First serviceable machine by Igor Sikorsky (U.S.). 1939.

Helium, 1868. Inventor: Sir William Ramsay (Great Britain).

Hovercraft, 1955. Inventor: C.S. Cockerell (England). Patented December 12. Earliest air-cushion vehicle patent was in 1877 by J.I. Thornycroft (1843-1921) (England). First 'light' Saunders Roe SRN1 at Cowes, England, (May 30, 1959).

Iron Working, c. 1000 BC. Inventor: Hallstatt, Austria. Introduced into Britain c. 550 BC.

Jet Engine, 1937. Inventor: Sir Frank Whittle (England) (b. 1906). First tested run in 1937. Principles announced by Marconnet (France), 1909 and Maxime Guillaume (France) 1921. First flight August 27, 1939 by Heinkel He.

Laser, 1960. Inventor: Dr. Charles H. Townes (U.S.). First demonstration by Theodore Maiman (U.S.). (Abbreviation for Light Amplification by Stimulated Emission of Radiation).

Lathe, c. 1500 BC. Inventor: Greeks for wood working. Possibly developed from potter's wheel. Earliest screw cutting lathe by Henry Maudslay (England) (1771-1831).

Launderette, 1934. Inventor: J.F. Cantrell (U.S.). Fort Worth, Texas, April 18.

Laws of gravitation and motion, 1687. Inventor: Isaac Newton (England).

Lightning Conductor, 1752. Inventor: Benjamin Franklin (U.S.) (1706-90), Philadelphia.

Linoleum, 1860. Inventor: Frederick Walton (England).

Locomotive, 1804. Inventor: Richard Trevithick (England) (1771-1833). Penryn, Wales, 9 Miles (February 21).

Loom (power), 1785. Inventor: Edmund Cartwright (England) (1743-1823).

Loudspeaker, 1924. Inventor: Rice-Kellogg (U.S.).

Machine Gun, 1861. Inventor: Richard Gatling (U.S.) (1818-1903).

Maps, c. 2500 BC. Inventor: Sumerians (clay tablets). Earliest world map by Eratosthenes c. 220 BC.

Margarine, 1863. Inventor: Hippolyte Mege-Mouriés (France). Initially, made of beef suet, warm milk and sheep stomach lining.

Match (Safety), 1855. Inventor: J.E. Lundström (Sweden). Amorphous phosphorus disc, 1845, Anton von Schrötter.

Microphone, 1876. Inventor: Alexander Graham Bell (U.S.) (1847-1922). Name coined 1878 by David Hughes.

Microscope, 1590. Inventor: Zacharias Janssen (Netherlands). Compound convex-concave lens.

Microscope (Electron), 1939. Inventor: Vladimir Kosma Zworykin (Russia, later U.S.) (b. 1889), et al. Demonstrated Camden, New Jersey, 1940.

Molecular hypothesis, 1811. Inventor: Amadeo Avogadro (Italy).

Motorcycle, 1848. Inventor: Edward Butler (England). First exhibited 1885 by Daimler. Earliest factory in Munich 1893.

Motor Scooter, 1919. Inventor: Greville Bradshaw (England).

Neon Lamp, 1915. Inventor: Georges Claude (France) (1871-1960). First installation in U.S. Cosmopolitan Theatre, July 1923.

Night Club, 1843. Inventor: Paris, France. First was *Le Bal des Anglais*, Paris.

Nineteenth Laws of planetary motion, 1609. Inventor: Johannes Kepler (Germany).

Nylon, 1937. Inventor: Dr. Wallace H. Carothers (U.S.) (1896-1937) at Du Pont Labs, Seaford Delaware, U.S. First stockings made about 1937. Bristle production, February 25, 1938. Yarn production, December 1939.

Ozone, 1839. Inventor: Christian Schonbein (Germany).

Paper, c. 150. Invented in China. Introduced to West via Yarkand, c. 750.

Parachute, 1797. Inventor: Andre-Jacques Garnerin (France) (1769-1823). First descent from 2,230 ft over Paris. Earliest jump from aircraft March 1, 1912 by Capt A. Berry (U.S.) over St Louis, Missouri.

Parchment, c. 1300 BC. Inventor: Egypt. Modern name from Pergamum, Asia Minor, c. 250 BC.

Parking Meter, 1935. Inventor: Carlton C. Magee (U.S.). Oklahoma City (July 16).

Phonograph, 1878. Inventor: Thomas Alva Edison (U.S.) (1847-1931). Head cranked cylinder at Menlo Park, J.J. Patent, February 19. First described on April 30, 1877, by Charles Cross (France) (1842-88).

Phosphorus, 1669. Inventor: Hennig Brand (Germany).

Photography (on metal), 1826. Inventor: J. Nicéphore Niépce (France) (1765-1833). Sensitised pewter plate, 8 hr exposure at Chalon-sur-Saône, France.

Photography (on paper), 1835. Inventor: W. H. Fox Talbot (England) (1807-77). Lacock Abbey, Wiltshire, England.

Photography (on film), 1888. Inventor: John Carbutt (U.S.). Kodak by George Eastman (U.S.) (1854-1932), August 1888.

Porcelain, c. 700. Inventor: China. Reached Baghdad, c. 800.

Potter's Wheel, c. 6500 BC. Inventor: Asia Minor. Used in Mesopotamia, c. 3000 BC.

Pneumatic Tyre. See bicycle tyres.

Printing Press, c. 1455. Inventor: Johann Gutenberg (Germany) (c. 1400-68). Hand printing known in India in 868.

Printing (Rotary), 1846. Inventor: Richard Hoe (U.S.) (1812-86). Philadelphia public ledger rotary printed, 1847.

Propeller (ship), 1827. Inventor: Francis Smith (England) (1808-74).

Proton, 1919. Inventor: Ernest Rutherford (Great Britain).

Pyramid, c. 2685 BC. Inventor: Egypt. Earliest was Zoser step pyramid, Saqqara.

Radar, 1922. Inventors: Dr. Alibert H. Taylor and Leo C. Young (U.S.). Radio reflection effect noted. First harnessed 1935 by Sir Robert Watson-Watt (England) (b. 1892).

Radioactivity, 1896. Inventor: Antoine Becquerel (France).

Radio Telegraphy (over 1 km), 1895. Inventor: Ernest Lord Rutherford (New Zealand) (1871-1937). At Cambridge, England.

Radio Telegraphy (Trans-Atlantic), 1901. Inventor: Guglielmo Marconi (Italy) (1874-1937). From Poldhu, Cornwall to St. John's, New Zealand (December 12). Earliest broadcast of speech by Prof. Reginald Fessenden (U.S.) (1868-1932) in Brant Rock, Massachusetts, December 24, 1906.

Rayon, 1883. Inventor: Sir Joseph Swan (England) (1828-1917). Production at Courtauld's Ltd., Coventry, England, November 1905. Name "Rayon" adopted in 1924.

Razor (Safety), 1895. Inventor: King C. Gillette (U.S.). First throw-away blades. Earliest fixed safety razor by Kampfe.

Razor (Electric), 1931. Inventor: Col. Jacob Schick (U.S.). First manufactured Stanford, Connecticut, March 18.

Reaper, 1826. Inventor: Henry Ogle (U.S.). First practical machine invented by Robert McCormick in Walnut Grove, Virginia, in 1831.

Record (long-playing), 1948. Inventor: Dr. Peter Goldmark (U.S.). Developed in the CBS Research Labs.

Refrigerator, 1851. Inventor: James Harrison (Scotland) Bendigo, Australia, Brewery.

Revolver, 1835. Inventor: Samuel Colt (U.S.) (1814-62).

Rubber (waterproof), 1819. Inventor: Charles Macintosh (Scotland) (1766-1843). First experiments in Glasgow. Rubber introduced into Europe in 1736.

Rubber (vulcanised), 1841. Inventor: Charles Goodyear (U.S.) (1800-60).

Rubber (tyres), 1857. Inventor: Thomas Hancock (England) (1786-1865). Introduced solid rubber tyres for vehicles (1847) (see also bicycle).

Rubber (latex foam), 1928. Inventor: Dunlop Rubber Co. (England). Team led by E. A. Murphy at Fort Dunlop, Birmingham, England.

Safety Pin, 1849. Inventor: William Hunt (U.S.). First manufactured New York City.

Sewing Machine. Fundamental principle, double-pointed needle invented by Charles F

Woisenthal (U.S.), 1755. First patent in England by Thomas Saint, 1790. First machine put to factory use invented by Barthelemy Thimonnier (France) (1793-1854), patented in 1830. The eye pointed needle and double-lock stitch invented by Walter Hunt of New York 1832, but never patented. Elias Howe (1819-67) of Spencer, Mass., developed his machine independently (not aware of Hunt's work), patented in 1846. Earliest practical domestic machine invented by Isaac M. Singer (1811-75) of Pittsford, New York, 1851.

Ship (sea-going), c. 2500 BC. Inventor: Egyptian ships traversed Eastern Mediterranean.

Ship (steam), 1775. Inventor: J.C. Porter (France) (1742-1818). On the Seine, near Paris.

Ship (turbine), 1894. Inventor: Hon. Sir Charles Parsons (England) (1854-1931). S.S. *Turbinia* attained 34.5 kts on first trial.

Siltcones, 1904. Inventor: Prof. F.S. Kipping (England).

Silk Manufacture, c. 50 BC. Inventor: Reeling machines devised, China. Silk mills in Italy, c. 1250, world's earliest factories of any kind.

Skyscraper, 1882. Inventor: William Le Baron Jenney (U.S.). Home Insurance Co. Building, Chicago, Illinois, 10-storey (top 4 steel beams).

Slide Rule, 1621. Inventor: William Oughtred (England) (1575-1660). Earliest slide between fixed stock by Robert Bissaker, 1654.

Spectacles, c. 1286. Inventor: Venice, Italy (convex). Concave lens myopia not developed till c. 1450.

Spinning Frame, 1769. Inventor: Sir Richard Arkwright (England) (1732-92).

Spinning Jenny, 1764. Inventor: James Hargreaves (England) (d. 1778).

Spinning Mule, 1779. Inventor: Samuel Crompton (England) (c. 1753-1827).

Steam Engine, 1698. Inventor: Thomas Savery (England) (c. 1650-1715).

Steam Engine (piston), 1712. Inventor: Thomas Newcomen (England) (1663-1729).

Steam Engine (condenser), 1765. Inventor: James Watt (Scotland) (1736-1819).

Stirrups (metal), c. 550. Inventor: Avars. Possibly originated in the eastern steppes of Asia.

Steel Production, 1885. Inventor: Henry Bessemer (England) (1813-98). At St. Pancras, London. Cementation of wrought iron bars by charcoal contact known to Chalybes people of Asia Minor, c. 1440 BC.

Steel (stainless), 1913. Inventor: Harry Brearley (England). First cast at Sheffield, England (August 20). Krupp patent, October 1912

for chromium carbon steel; failed to recognise corrosion resistance.

Stethoscope. Inventor: Dr. William Stokes (England) (1804-78).

Streetcar (railed), 1550. Inventor: Rail mining tracks, Leberthal, Alsace.

Streetcar (electric), 1879. Inventor: E. Werner von Siemens (Germany) (1813-92). Earliest permanent self-propelled public streetcar at Lichterfelde, Germany, 1881. Demonstration at Berlin trade exhibition over 300 yards, May 31, 1879.

Submarine, 1776. Inventor: David Bushnell (U.S.), Saybrook, Connecticut.

Tank (military), 1914. Inventor: Sir Ernest Swinton (England) (1868-1951). Built at Leicester, England. Tested in September 1915.

Telegraph, 1837. Inventors: Sir William Cooke (1806-79), Charles Wheatstone (England) (1802-75). Euston Camden Town, London, demonstration (July).

Telegraph Code, 1837. Inventor: Samuel F.B. Morse (U.S.) (1791-1872). The real credit belonged largely to his assistant, Alfred Vail (U.S.).

Telephone, 1876. Inventor: Alexander Graham Bell (U.S.) (1847-1922). First exchange at Boston, Mass., 1878.

Telescope, 1608. Inventor: Hans Lippershey (Netherlands) (October 2).

Television, 1926. Inventor: John Logie Baird (Scotland) (1888-1946). First public demonstration, January 27, London. First patent V.K. Zworykin (Russia, later U.S.) December 29, 1923. First short-range transmission C. Francis Jenkins (U.S.), June 13, 1925.

Thermometer, 1593. Inventor: Galileo Galilei (Italy) (1564-1642).

Tractor (gasoline engine), 1892. Inventor: John Froelich (U.S.). Completed in Iowa (September 6).

Tractor (caterpillar), 1900. Inventor: Benjamin Holt (U.S.).

Transformer, 1842. Inventor: William Stanley (U.S.).

Transistor, 1948. Inventor: John Bardeen, William Shockley and Walter Brattain (U.S.). Researched at Bell Telephone Laboratories. First application for a patent was by Dr. Julius E. Lilienfeld in Canada in October 1925.

True nature of combustion, 1789. Inventor: Antoine Lavoisier (France).

Tungsten, 1783. Inventors: Fausto and Juan Jose de Elhuyar (Spanish).

Typewriter, 1864. Inventor: Miller Gorham (Austria). First practical patent by Christopher Sholes (U.S.) (1868).

Uranium, 1841. Inventor: Martin Klaproth (Germany).

Variable Wing, 1956. Inventor: Dr. Barnes Wallis (England). First military application in U.S. F-111 jet fighter, 1964.

Washing Machine (electric), 1907. Inventor: Hurely Machine Co. (U.S.). Marketed under name of "Thor" in Chicago, Illinois.

Watch (self-winding), 1791. Inventor: Abraham-Louis Breguet (France). Rocker pedometer action.

Weider (electric), 1877. Inventor: Elisha Thomson (U.S.) (1853-1937).

Wheel, c. 3800-3600 BC. Inventor: Sumerian civilisation. Spokes as opposed to solid wheels introduced c. 1900 BC.

Windmill, c. 600 AD. Inventor: Persian corn grinding, oldest known port mill, 1191, Bury St Edmunds, England.

Writing, c. 3400 BC. Inventor: Sumerian civilisation. Earliest evidence found at Warka, Iraq.

Xerography, 1938. Inventor: Chester Carlson (U.S.). First copying machine marketed in U.S. in 1950.

X-ray, 1895. Inventor: Wilhelm von Roentgen (Germany). University of Wurzburg (November 8). Zeppelin, See Airship (rigid).

Ziggurats, c. 2000 BC. Inventor: Sumerian civilisation. Earliest staged towers at Ur in Iraq.

Zip Fastener, 1891. Inventor: Whitcomb L. Judson (U.S.). First practical fastener invented in U.S. by Gideon Sundback (Sweden) in 1913.

Q. Mention the outstanding work of each of the following persons:

(i) Charles Darwin; (ii) Alexander Flemings; (iii) Madame Curie; (iv) Alfred Nobel; (v) Louis Pasteur.

A. (i) Charles Darwin : He was a British biologist who discovered the theory of evolution.

(ii) Alexander Fleming : He was a Scottish bacteriologist who discovered penicillin in 1928.

(iii) Madame Curie: She was a French physicist who isolated radium.

(iv) Alfred Nobel: He was a Swedish scientist who invented dynamite.

(v) Louis Pasteur: He was a French chemist who discovered vaccination for hydrophobia and gave Germ Theory of Diseases.

Q. Who invented pneumatic tyre.

A. John Boyd Dunlop (1840-1921).

Q. For what important scientific works are the following famous?

(i) Sir Frederick Grant Banting;

(ii) Hideki Yukawa; (iii) Edward Jenner; (iv) Sir James Young Simpson; (v) C.V. Raman.

A. (i) He discovered hormone insulin which is used in the treatment of diabetes. Sir Banting received Nobel Prize in 1923.

(ii) He discovered a group of elementary particles called MESONS. The weight of meson is intermediate between that of an electron and a proton. Received Nobel Prize in 1949.

(iii) He discovered vaccination for small pox.

(iv) He worked on chloroform (CHCl_3).

(v) He studied the phenomenon in light known after his name 'Raman Effect'. Received Nobel Prize in 1930.

5. Everyday Science

Q. How does a submarine float and sink as desired?

A. The submarine has a chamber in which water can be filled in or pumped out as required.

To make it sink into the water, the chamber is filled with water so that its weight exceeds the upthrust produced on the submarine by the displaced water. To bring the submarine up, the water in the chamber is pumped out. Now the upthrust produced by the displaced water is greater than or equal to the weight of submarine and hence it can float.

Q. Why is cooking quicker in a pressure cooker?

A. The boiling point of water (or any other liquid) depends upon the pressure on its surface. Steam produced inside the cooker builds up

pressure thereby raising the boiling point of water, which results in quick cooking.

Q. Why does an electric bulb make a 'bang' when it is broken?

A. There is a vacuum inside the electric bulb. When the bulb is broken air rushes in at great speed from all sides to fill the vacuum. The rushing of air produces a noise generally referred to as a 'bang'.

Q. Why are curved railway tracks banked?

A. The outer part of a railway track near the bend or a curve is generally raised, i.e., the outer track of the bend is slightly higher than the inner. This is known as banking of the rails or track. When a fast moving train takes a curved path it tends to move away tangentially. In order to prevent this, the curve is

banked on the outside to produce the necessary centripetal force required to keep the train moving in a curved path. If there is no banking of the track, this centripetal force that is obtained from the friction between the rim of the wheels and rails which is generally small may cause the train to jump off the rails.

Q. Why can't a petrol fire be extinguished by pouring water over it?

A. Water, being heavier, slips down and petrol will rise to the surface and continue to burn as before. Hence, water cannot be used for extinguishing petrol fire.

Q. Why do a gram of weight and a pound of weight released simultaneously from the top of a tower reach the ground at the same time?

A. This is in accordance with the fact that both the weights fall with the same acceleration of

were to disappear suddenly?

A. In the absence of the force of gravity all living objects on the earth will be practically in a floating condition. They will be thrown away because of the centrifugal force caused by the rotation of earth. Thus, one will not be able to eat, drink, move and continue to live.

Q. Why does a needle sink in water while an iron ship floats on it?

A. According to the law of floatation, a body floats in a liquid when the weight of the whole body is equal to the upward thrust of the liquid.

A solid steel ball sinks in water because the weight of water displaced by it is less than the weight of needle or steel ball. An iron ship is so shaped that it can displace a large volume of water. The weight of the water displaced by the immersed portion of the ship is equal to the ship. Hence, it can float.

Q. When a moving train slows down quickly, will a passenger tend to fall backward or forward? Explain why?

A. The passenger will tend to fall forward because the lower portion of his body which is in contact with the seat will come to rest quickly whereas the upper portion of the body continues to be in a state of motion. Hence, the person is thrown forward.

Q. Explain why it takes more time to cook meat and vegetables at hill stations?

A. The boiling point of water depends upon the pressure on its surface. It increases with

increase of pressure and decreases on lowering of pressure. At higher altitudes the atmospheric pressure is low as compared to that in the plains.

Hence, cooking the meat and vegetables at hill stations. This difficulty may be overcome by using a pressure cooker. Water can be made to boil at any desired temperature with the help of this appliance.

Q. Why is it more difficult to breathe on mountains than on plains?

A. With higher altitudes the pressure of air goes on decreasing. The oxygen content in the air is also reduced considerably. We experience difficulty in breathing on mountains because the pressure of air outside is less as compared to the pressure of air inside the lungs.

Q. Why does ink leak out of a partially filled pen when taken to a higher altitude?

A. The density as well as pressure of air goes on decreasing with altitude. When a partially filled pen is taken to a higher altitude, it leaks because the pressure of air acting on the ink inside the pen is greater than the pressure of air outside.

Q. Explain why one leans forward while climbing a hill?

A. The person leans forward in order to keep his centre of gravity within the base of support.

By leaning forward, the vertical line passing through his centre of gravity may fall within the base. For similar reasons, a man has to bend backward while climbing down a hill.

Q. Why is it dangerous to allow extra passengers on the upper deck of a double-decker bus?

Or

Explain why passengers in a boat are not allowed to stand?

A. This is done so that the centre of gravity of the bus is not raised and the bus may not topple over due to unstable equilibrium. For the similar reason, passengers in a boat are not permitted to stand.

Q. Why is a small space left at the joint between the two rails?

A. Metals expand on heating and contract on cooling. A small space is left between each set of two rails of railway line to allow for their expansion in summer and contraction in winter, respectively.

Q. If a highly corked glass bottle full of water is left outdoors on a frosty night it will burst. Why?

A. The water contained in the bottle will freeze on a frosty night and convert into ice. There

occurs an increase in volume during this transformation. As there is no room available for the increased volume, this may result in bursting of the bottle.

Q. When we drink soft drink through a straw, why does the liquid go up into our mouth?

A. When a person sucks air from the straw, the pressure of air inside the straw is reduced as compared to the atmospheric pressure acting on the surface of the liquid. Therefore, the soft drink rushes up into the straw and to the mouth.

Q. What weight of air do we carry?

A. 14.72 lbs per square inch.

HEAT

Q. Explain why the moisture gathers on the outside of a glass tumbler containing cold water.

A. Because the water vapours present in air get cooled and appear as droplets of water on coming in contact with the cold surface of the glass tumbler.

Q. Explain why in winter evenings and mornings fog or mist tends to collect in valleys?

A. Because in winter evenings and mornings the temperature of the atmosphere is sufficiently low so as to cause the condensation of water vapours present in the atmosphere. The condensed water vapours being heavy, appear as fog or mist and tend to collect in valleys.

Q. Explain why it snows on high hills, while it rains lower down.

A. The temperature of the atmosphere at higher altitudes is generally below the freezing point of water. Hence, the water vapours present in the air at higher altitudes get converted into snow which collects on the hills. Lower down, the temperature of the atmosphere is above the freezing point of water. Hence, the water vapours are not converted into liquid water which comes down as rain in those regions.

Q. Explain why—if you are sweating, you will feel cooler on a hot day than on a cooler moist day.

A. On a hot dry day the perspiration gets evaporated quickly causing more cooling effect. On a cooler moist day the rate of evaporation is comparatively less. Therefore, the cooling caused by evaporation is also less on a cooler moist day. Hence, after sweating one feels cooler on a hot day than on a cooler moist day.

Q. Explain why—if a highly pumped up bicycle tyre is left in the hot, it may burst.

A. All gases expand on heating. When a highly pumped up bicycle tyre is left in the hot, there

occurs considerable increase in the volume of the air. As sufficient space for the expansion of the air is not available (because bicycle tyre is already highly pumped), it may result in bursting of the tyre.

Q. Why does a thermometer kept in boiling water show no change of temperature even when the water is continuously heated?

A. A liquid boils at a particular temperature called the boiling point of the liquid. Once the liquid starts boiling the thermometer reading remains constant because there is no further increase in temperature. The quantity of heat supplied is being utilised as latent heat in converting the liquid at boiling point into vapour at the same temperature. That is why a thermometer kept in boiling water shows no change of temperature even when the water is continuously heated.

Q. Why do pipes carrying water often burst in cold countries during winter?

A. The temperature falls below 0°C in severe cold resulting in the conversion of water to ice. Since there occurs an increase in volume during this transformation, it exerts a great force which results in the bursting of water pipes.

Q. Why does water get cooled on evaporation?

A. Some heat energy is utilised during the process of evaporation. This energy is taken from the water itself thus producing a lowering of temperature in the remaining water. Hence, water gets cooled on evaporation.

Q. Explain why water gets cooled in an earthen pot much more than in a metal or glass container.

A. In an earthen pot, water gets evaporated through the pores of the pot quickly. As explained in the previous question cooling is caused by evaporation. In the case of metal or glass container, there are no pores with the result that the rate of evaporation is quite low, thus producing only a slight fall in temperature.

Q. Why does the ice not readily melt when salt is sprinkled over it?

A. When salt is sprinkled over ice, some of it dissolves. As dissolution of the salt is accompanied by absorption of heat, the temperature of the system will fall below 0°C . Hence, ice does not melt readily.

Q. Why will a white roof keep your house cooler in summer than will a black roof?

A. White roof will reflect more and absorb less heat rays whereas black roof will absorb more and reflect less heat rays. Hence, a white roof will keep the house cooler in summer.

Q. Why is it hotter on a cloudy covered night than in a clear night?

A. Because clouds prevent the heat radiated out by the earth from escaping into the sky. As this heat remains in the atmosphere, the cloudy nights are warmer in comparison to clear nights.

Q. Why are cloudy days cooler but cloudy nights warmer than the clear ones?

A. Because clouds do not allow the sun rays to fall on earth. Moreover, clouds can absorb more heat radiation as compared to dry air. Both these factors prevent the earth from becoming too much heated. Hence, cloudy days are comparatively cooler.

(Also see previous question.)

Q. Why are metal tyres of cart wheels fitted when hot?

A. Metal (iron) tyre is heated strongly. On heating tyre expands and the circumference of the tyre becomes slightly bigger than the wooden wheel. This permits the easy slipping of the tyre on wooden wheel. Thereafter, cold water is poured over the metal tyre and it shrinks in size. Therefore, its circumference fits the wheel well and holds on tightly.

Q. Explain how dew is formed?

A. The objects on the surface of the earth receive direct heat rays from the sun during day time and get heated up. During night, objects lose heat by radiation and their temperature falls. Those objects which are good radiators of heat radiate heat more quickly and get cooled below the temperature of the surroundings. Air, on coming in contact with these cooled objects, in turn loses its heat and becomes saturated with a vapour it contains. If the temperature of air is reduced to its dew point, the water vapour present in it condenses to form dew which collects on the surface of the cold bodies. Dew is generally formed on green plants, leaves and grass as they are good radiators of heat.

Q. Why do we perspire before rains?

A. Just before the rain falls the atmosphere gets saturated with water vapours. The perspiration exuded by us, therefore, does not evaporate quickly but appears on the surface of the skin. Hence, we feel the perspiration at that time.

Q. Why is Eau-de-cologne applied to the forehead of a sick person?

A. Eau-de-cologne, which is volatile in nature, will evaporate as soon as it is applied on the forehead of a sick person. During the process of evaporation, some heat from the body will be taken away which results in lowering the temperature of the sick person. Thus

eau-de-cologne helps to bring down the body temperature and provides relief to the sick person.

Q. Why is the water in an open pond cool even on a burning hot day?

A. This is due to the fact that cooling is caused by evaporation. As the water evaporates from the surface of tank or pond, a good deal of heat is taken away. This results in lowering the temperature of remaining water.

Q. Why does a perspiring man feel relief when air floats by his side?

A. The flow of air increases the rate of evaporation of perspiration from the body. During the process of evaporation, some body heat is taken away thus giving a sense of coolness to the body and providing relief to the perspiring person.

Q. Account for the following: By putting on a shirt, a person feels warm.

A. Cloth is poor conductor of heat. It, therefore, prevents the body heat to escape in winter. During summer external heat cannot reach the body for the same reasons. Hence, a person wearing a shirt feels comfortable.

Q. How does the thermos keep the liquid hot for long time?

A. It is a flask in which loss or gain of heat through conduction, convection and radiation has been reduced to a minimum. It is used for keeping a hot liquid hot and a cold liquid cold for a good length of time.

Q. Why is water from a hand pump warm in winter and cold in summer?

A. In winter outside temperature is low as compared to the temperature of water obtained from the hand pump. Hence, it feels warm. This is due to the fact that the upper layer of the earth's crust is exposed to the atmosphere and is at a lower temperature. Water, which is underground, is comparatively at a higher temperature. In summer the outside temperature is high and, hence, the water from a hand pump feels cold.

Q. A thick glass tumbler often cracks when a very hot liquid is poured in it. Why?

A. The inner surface of the thick glass tumbler coming in contact with the hot liquid expands more in comparison to the outer surface which is relatively at a lower temperature. The uneven expansion of inner and outer surface may produce cracks.

Q. Glass when heated, cracks, while metal does not. Explain.

A. Glass is a poor conductor of heat. On heating, the heat is not transmitted quickly. This

results in unequal expansion of the inner and outer surface of glass which may crack. On the other hand, metal is a good conductor of heat. Therefore, when heated, the heat is transmitted quickly and uniformly in all directions. The expansion produced is uniform and, therefore, cracking cannot take place.

Q. Ice wrapped in a blanket does not melt away quickly. Why?

A. Woollen blanket is a bad conductor of heat. It does not allow the external heat rays to enter. Therefore, ice does not melt for a considerable length of time.

Q. Why are places near the sea cooler in summer and warmer in winter than places farther inland?

A. Because of its high specific heat it takes longer for water to get heated up or to get cooled. During summer days the land near the sea gets heated up quickly but the sea water remains cool and thus cool breeze blowing from the sea reduces the heat in the adjoining land area. The reverse happens in winter. The land gets cooled quickly but the sea water remains warm and thus the land gets warm breeze from the sea. But the land farther inside does not have this advantage. This accounts for the difference in the climatic conditions.

Q. Why does grass gather more dew in the night than stones and bricks?

A. Dew is easily formed on the objects which are good radiators, bad conductors and are in close contact with the surface of the earth. Grass and leaves are better radiators of heat than stones and bricks. Hence, more dew is formed on grass and leaves. Moreover, grass and leaves give out water constantly which appears in the form of dew because the air near them is saturated with water vapours.

Q. Why are mornings and evenings less warm than noon?

A. In the mornings and evenings the rays of the sun falling on earth are slanting and their distance is more. The earth gets heated up only slightly. At noon the rays of the sun falling on earth are nearly vertical and the distance is also less, with the result that the earth gets heated up considerably. Hence, mornings and evenings are less warm than noon.

Q. Why do we perspire on a hot day?

A. Human body is physiologically conditioned to maintain uniform temperature. When the heat produced in the body becomes excessive and not dissipated properly, the sweat glands inside the body are stimulated to secrete sweat. Therefore, we perspire on a hot day. However, when sweat

evaporates from the body it produces a cooling effect.

Q. Why does a housewife blacken the bottom of the 'degchi' used in the kitchen?

A. The blackened surface absorbs more heat as compared to polished surface. That is why blackened 'degchi' is used.

Q. Steam causes a severer burn than boiling water. Why?

A. The amount of heat possessed by steam (100°C) is much greater than the amount of heat possessed by water at the same temperature. This is due to the fact that to convert 1 gm of water at 100°C into steam (100°C), 540 calories of heat are required. This additional heat contained in steam is responsible for causing severe burns.

LIGHT

Q. What causes an object to look black?

A. The colour of an object depends upon the nature of light falling on it and also on the constituent colour of the incident light reflected or transmitted by it. If all the constituent colours of the incident light are absorbed by the body, it appears black.

Q. Why is rose red and grass green in day light?

A. A rose appears red when day light falls on it because it absorbs all the constituent colours of white light except red which it reflects to us. Similarly, grass absorbs all the constituent colours of white light except green which is reflected to us. Therefore, grass appears green to us.

Q. What will be the colour of grass in blue light?

A. Grass will appear dark in colour in blue light because it has property of absorbing all other colours except its own colour. The blue rays falling on grass are absorbed by it and, therefore, it appears dark in colour.

Q. The colour of the same cloth when seen in electric light appears different from the colour when seen in daylight. Why?

A. When a body is viewed in daylight, it reflects some colour which is called its natural colour. Electric light, on the other hand, is not pure. It may be deficient in some colours or has got some particular colour in excess. This is the reason why objects sometimes appear to be of a different colour in artificial light from their natural colour which they give in the white light.

Q. A dark blue suit appears black when viewed in candle light. Why?

A. Candle light is deficient in blue colour whereas yellow colour is in excess. When yellow

light falls on the blue suit, blue colour is absorbed by it and, therefore, the appearance of the suit is black.

Q. Why does a green leaf appear green in daylight but dark in red light?

A. A green leaf appears green in day light because it absorbs all the constituent colours of white light except green which is reflected to us. Green leaf appears dark when viewed in red light because it has the property of absorbing all colours except green. As red rays falling on the leaf are absorbed by it, it will appear dark.

Q. Why does a coil lying at the bottom of a can filled with water look at lesser distance below the water level than it actually is?

Or

Why does a swimming pool appear less deep than it really is?

A. This is due to the phenomenon of refraction of light. The rays of light coming from the bottom of the pool (or from the coil lying at the bottom of the can) travel from water to air. As the rays pass from denser (water) to rarer (air) medium they bend away from the normal. When the rays are produced back they form an image of the coil (bottom of the pool) at a point which is a little above the real position. Therefore, the coil appears to be slightly raised and the pool appears to be less deep than it really is.

Q. Why when a gun is fired within a visible distance, the sound is heard a little after the smoke is seen?

A. The velocity of light is much greater than that of the sound. In other words, light travels faster than sound. Therefore, the flash of lightning or smoke of the gun is seen before the thunder of lightning or the sound of the gun being fired.

Q. In summer, white or light coloured clothes are preferred to dark coloured clothes. Why?

A. White or light coloured clothes are good refractors and bad absorbers of heat whereas dark-coloured clothes are good absorbers of heat. Therefore, in summer, white or light-coloured clothes are preferred because they absorb very little heat from the sun's rays and reflect more. Hence, the person feels more comfortable.

Q. Why is a rainbow seen after rain?

A. After the rain some clouds continue to linger in the sky and they contain water droplets. Water droplets act like prisms. Sun's rays falling on water droplets suffer dispersion and produce

a spectrum. The different colours appear in the form of a rainbow.

Q. Although each eye forms an image, we do not see double images.

A. The axes of the two eyes are towards the same object. The object appears to be only one object as images formed by two eyes are fused in the brain producing only one image. We see only one object as the brain points out that we also have two ears.

Q. One eye is sufficient to see an object. What is the use of two eyes?

A. The area seen by one eye is comparatively less (approx. 180°) than with two eyes (range 180°). Two eyes give better judgement of the size of objects.

Left eye sees more of the object and the right eye sees less. Thus, two eyes do not form double images and the fusion of images in the brain gives us the stereoscopic vision.

Q. Why is it difficult to see an object with only one eye?

A. It is difficult to judge the distance between the tip of the needle and the hole of the needle without the eye. Therefore, the needle passes not through the front or behind the hole.

With two eyes, however, the relative distance between the object and the eye becomes easy to judge.

Q. Why do we bring our mouth close to the ear when we shout?

A. By bringing the ear close to the mouth, the sound energy is not lost in all directions, rather being directed in a particular direction. Sound produced is loud.

Q. Why are fuses used in electrical installations?

A. A safety fuse is a material having a low melting point in an electrical circuit to allow excess current to flow without the fuse wire getting heated and melting. When the current exceeds the rated value, the fuse wire gets heated and melts, breaking the circuit.

Q. Why are tallest structures in a locality most likely to be struck by lightning?

A. When charged clouds pass over the building, opposite charges are induced on it thus attracting the charges of clouds. The tallest building being nearer to the clouds, there is greater possibility for the lightning discharge to take place between the building and the cloud.

Q. Why is the filament in an electric lamp not burnt up although its temperature is about 2700°C when it glows?

A. The presence of oxygen or air is essential for the process of combustion to take place. To avoid the process of combustion, the air inside the bulb is removed by evacuation or alternatively the bulb is filled with an inert gas like argon or helium.

6. Physics

TERMINOLOGY

Absolute Zero or zero on the absolute temperature scale is the lowest temperature theoretically possible and is equal to -273°C .

Adiabatic process is a process in which no heat enters or leaves a system. An adiabatic expansion results in cooling of a gas whereas an adiabatic compression has the opposite effect.

Advection is a process of transfer of atmospheric properties by horizontal motion in the atmosphere.

Alpha Decay is a radioactive disintegration process in which the parent nucleus decays spontaneously into an alpha particle and a daughter nucleus.

Alpha particle is the nucleus of a helium atom carrying a positive charge of $2e$.

Alternating current is an electric current that periodically reverses its direction in the circuit, with a frequency independent of the constants of the circuit.

Amplitude is the peak value of an alternating quantity in either the positive or negative direction and is particularly applied to the case of a sinusoidal vibration.

Angstrom is the unit of wavelength of light. $1 \text{ Angstrom} = 10^{-8} \text{ cm}$. There is a bigger unit for measuring the wavelength of infrared light; it is called a milli-micron and is equal to 10^{-7} cm . $1 \text{ micron} = 10^{-4} \text{ cm}$, is a still bigger unit.

Angular displacement: The angle through which a point, line or body is rotated, in a specific direction and about a specified axis.

Angular velocity is the rate at which a body rotates about an axis, expressed in radians per second. It is a vector quantity equal to the linear velocity divided by the radius.

Anion is an ion that carries a negative charge and in electrolysis moves towards the anode.

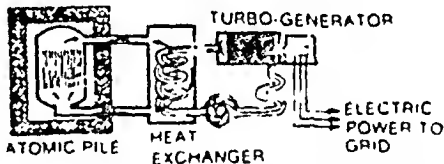
Anode is the positive electrode of an electrolytic cell, discharge tube, valve or a rectifier.

Astigmatism refers to defect of an optical image in which the rays passing through the lens focus in different planes. It is caused due to unusual curvatures of cornea or aberration in the lens.

Atomic number is the number of protons contained in the nucleus of an atom.

Atomic energy is liberated by the disintegration of atom. Elements like uranium, etc., can be disintegrated to release atomic energy. The energy released in the fission of a single atom of uranium is about one million times the energy released per atom of the combustion of a fuel like coal.

Atomic pile is a nuclear chain reactor.



Atomic Weight is the weight of an atom of hydrogen taken as the standard, the respective weights of the atoms of all other substances are expressed in terms of it. So, when it is stated that the atomic weight of iron is 56, it is meant that the atom of iron is 56 times as heavy as the atom of hydrogen.

Aurora is an intermittent electrical discharge occurring in the rarefied upper atmosphere.

Blackbody is the body whose surface absorbs all radiations incident on it and thus neither reflects nor transmits any radiation.

Boiling point is the temperature of a liquid at which visible evaporation occurs throughout the bulk of the liquid and at which the vapour pressure of the liquid equals the external atmospheric pressure. It is the temperature at which liquid and vapour can exist together in equilibrium at a given pressure.

Bond energy is the energy required to break a chemical bond between two atoms in a molecule. The bond energy depends on the type of atoms and on the nature of the molecule.

Boyle's law If a given mass of a gas is compressed at constant temperature the product of the pressure and volume remains constant.

Breeder reactor is a nuclear reactor in which more fissile material is produced than is consumed.

Brownian movement is the unceasing and irregular motion of small particles (about $1\ \mu\text{m}$ in diameter) when held in suspension in a liquid.

Buoyancy: Archimedes' principle states that if a body is wholly or partly immersed in a fluid, it experiences an upward force equal to the weight of the fluid which would fill the space occupied by the immersed part of the body.

Calibration is the determination of the absolute values of arbitrary indications of an instrument.

Calorie is the unit of heat. It is the amount of heat required to raise the temperature of one gram of water through 1°C .

Chain reaction is a series of nuclear transformations initiated by a single nuclear fission.

Charge is a property of some elementary particles that causes them to exert force on one another.

Charles' Law: The volume of a fixed mass of any gas increases for each degree rise in temperature by a constant fraction of the volume at 0°C , the pressure being constant.

Critical temperature is the temperature above which a substance can exist only in its gaseous state and cannot be liquified regardless of the magnitude of pressure exerted on it. In metallurgy, it is the temperature at which a metal or alloy begins to change during heating or cooling.

Density is the mass per unit volume of a substance. In SI units, it is measured in kg/m^3 .

Dew point is the highest temperature a surface may have in order that dew may condense on the surface from a humid atmosphere.

Dielectric is a substance that is capable of sustaining an electrical stress i.e. an insulator.

Diffusion is the process by which fluids and solids mix intimately with one another due to the kinetic motions of the particles.

Diode is any electronic device with only two electrodes. Diodes are usually used as rectifiers.

Elasticity is the property of a body or substance by which it tends to resume its original

size and shape after being subjected to deforming forces.

Electret is a piece of solid matter which retains a permanent electron polarisation like a permanent magnet.

Electrosmosis is the passage of an electrolyte through a membrane or porous partition under the influence of an electric current.

Emission is the liberation of electrons or electromagnetic radiations from the surface of a solid or liquid, usually electrons from a metal.

Equilibrium: A system of coplanar forces is in equilibrium when the algebraic sums of the resolved parts of the forces in any two directions are both zero and the algebraic sum of the moments of the forces about any point in their plane is zero.

Escape velocity is the velocity that a projectile space probe etc., must reach in order to escape the gravitational field of a planet or the moon. It depends on the mass and diameter of the planet. The escape velocity is about $11200\ \text{m/sec}$. for the Earth.

Fatigue is the progressive decrease of a property due to repeated stress.

Ferromagnetism is a property of certain solid substances that, having a large positive magnetic susceptibility, are capable of being magnetised by weak magnetic fields. The chief ferromagnetic elements are iron, cobalt and nickel.

Flash point is the lowest temperature at which a substance will provide sufficient inflammable vapour to ignite upon the application of a small flame.

Fluorescence is the absorption of radiant energy by a substance, immediately followed by its remission in the form of visible light of a greater wavelength.

Freezing mixture is a mixture of ice with salt so as to lower melting point of ice and keep other bodies cooler for longer time.

Fuse is a device to prevent unduly high current from passing through an electric circuit by breaking contact.

Fusion is the change of the state of a substance from solid to liquid which occurs at a definite temperature at a given applied pressure.

Gamma rays are electromagnetic radiations emitted spontaneously by certain radioactive substances in the process of a nuclear transition.

Gauss's theorem is total electric flux acting normal to any closed surface drawn in an electric field is equal to the total charge of electricity inside the closed surface.

Generator is a machine for converting mechanical energy into electrical energy.

Heat exchanger is a device for transferring heat from one fluid to another without the fluids coming in contact. Its purpose is either to regulate the temperatures of the fluids for optimum efficiency of some process, or, to make use of heat that would otherwise be wasted.

Horse Power is the practical unit of power—the power of an agent which can work at the rate of 550 foot-pounds per second or 33,000 foot-pounds per minute. 1HP = 746 watts.

Hypermetropia is a defect of eye in which near objects are not distinctly visible. This is also called long-sightedness.

Ice point is the temperature of equilibrium of ice and water at standard pressure.

Incandescence is the emission of visible radiation from a substance at high temperature.

Incandescent lamp is an electric lamp in which light is produced by the heating effect of a filament of carbon, osmium or tungsten.

Incidence angle is the angle between the ray striking a reflecting or refracting surface and the normal to the surface at the point of incidence.

Inertia is property of matter by which it resists change in its state of rest or in its direction of motion.

Intensity is the rate of energy transfer per unit area normal to the direction of propagation at any given point.

Ion is electrically charged atom or group of atoms.

Isothermal is a line joining all points on a graph that correspond to the same temperature.

Isothermal process is a process that occurs at a constant temperature.

Isotopes are atoms of an element having the same atomic number but different atomic weights.

Jet engine is aero-engine deriving its thrust from the high velocity of the gases it ejects.

Joule is the unit of work or energy. It is equal to 10^7 ergs. It is the energy consumed in one second in an electrical circuit through which a current energy of one ampere is flowing against a potential difference of one volt.

Joule effect is the liberation of heat by the passage of a current through an electric conductor, due to its resistance.

Kilowatt-hour is a unit of energy equivalent to the energy produced when power of 1 kilowatt is expended for 1 hour.

Kinetic energy is the energy possessed by a particle or body by virtue of its motion.

Laminar flow is steady flow in which the fluid moves in parallel layers or laminae, the velocities

of the fluid particles within each lamina not being necessarily equal.

Laser is a source of intense mono-chromatic coherent radiation in the visible, ultraviolet and infrared regions of the spectrum.

Latent heat is the quantity of heat required to convert 1 gm of a substance from one form into another. The unit is calories per gram.

Lightning is a disruptive discharge of electricity between a charged cloud and the earth or between two clouds. It is caused when the difference of potentials between a cloud and earth or between two clouds becomes so large that electricity passes across the gap.

Lightning conductor is a conductor of electricity installed in a structure to save it from damage. It neutralises the electric charge of the clouds coming in its contact or carries it to the earth.

Light Year is the distance light travels in one mean solar year, at the speed of 1,86,000 miles per second. It is equal to 5,880,000,000 miles. It is used as a unit for measuring stellar distances.

Magnetic circuit is the completely closed path described by a given set of lines of magnetic flux.

Magnetic field is the field of force surrounding a magnetic pole or a current flowing through a conductor, in which there is a magnetic flux.

Mariner's Compass is an apparatus for determining direction, graduated to indicate 32 directions. The "N" point on the dial indicates north pole and the "S" point, south pole.

Mechanical equivalent of heat (Joule's Constant) is the ratio of amount of work done and the quantity of heat produced in a mechanical work. It is a constant.

Modulus of Elasticity is the ratio of stress to strain for a body obeying Hooke's law.

Molecular weight is the sum of the atomic weights of all the atoms contained in a molecule.

Momentum is the product of the mass and the velocity of the particle. It is a vector quantity directed through the particle in the direction of motion.

Myopia is a defect of vision blurring distant objects. Also called shortsightedness. It is corrected by the use of concave lenses.

Negative electron is an electron with a negative charge as opposed to the positively charged electron or positron.

Neutron is an elementary particle having zero charge and a rest mass of 1.674×10^{-27} kg, that is a constituent of the atomic nucleus.

Newton is the SI unit of force, defined as the force that provides a mass of one kilogramme with an acceleration of one metre per second per second.

Nuclear fission is splitting up of a heavy atom (e.g., uranium in two or more new atoms) with enormous release of energy.

Nuclear chain reaction occurs in radioactive elements charging the nuclei of atoms and yielding atoms of different elements or isotopes of the original elements.

Ohm is the SI unit of electrical resistance, defined as the resistance between two points on a conductor through which a current of one ampere flows as a result of a potential difference of one volt applied between the points, the conductor not being a source of electromagnetic force.

Ohm's Law the electric current in any conductor is proportional to the potential difference between its ends, other factors remaining constant.

Optical Centre is a point on the surface of a lens where the optical axis intersects the surface.

Paramagnetism is the property of substances that have a positive magnetic susceptibility.

Partial pressure is the pressure of a gas in a mixture of gases occupying a fixed volume of the pressure that the gas would exert if it has alone occupied the total volume.

Pascal's principle: Pressure applied at any point of a fluid at rest is transmitted without loss to all other parts of the fluid.

Pauli Exclusion Principle is the principle that no two fermions can exist in identical quantum states, thus no two electrons in an atom can be identical in their quantum numbers.

Persistence of vision is the impression of an image on the retina for an instant after its withdrawal. Successive images produce an impression of continuity. The principle is used in cinema.

Presbyopia is a defect of vision in which objects are not clearly visible due to weakening of eye muscles in old age. It is overcome by the use of suitable lenses in the same frame.

Proton is a positive hydrogen ion; it is 1836 times heavier than electron.

Quantum Theory is a theory which is based on Planck's radiation law. The concept of discontinuity of energy was introduced. According to this theory, changes of energy in atoms and molecules occur only in discrete quantities, each an integral multiple of a fundamental quantity. The

fundamental quantity is generally referred to as quantum.

Quartz is a double refracting crystal, optically uniaxial and positive and rotating the plane of polarization to the left or right according to the variety, and to a different extent for different colours.

Radiation is transmission of heat without any carrier in between, e.g., transmission of heat from sun to the earth's atmosphere.

Radioactivity is the phenomenon of spontaneous disintegration of unstable atomic nuclei to give more stable product nuclei. It is usually associated with the emission of alpha, beta and gamma rays.

Radio frequency is electromagnetic radiation in the frequency band 3 kilohertz to 300 gigahertz.

Radiography is the production of photographs of the internal structure of bodies, opaque to visible light, by the radiation from X rays or by gamma rays from radioactive substances.

Raman effect is the phenomenon of scattering of light when monochromatic light passes through a transparent medium.

Reactor is an apparatus for generation of atomic energy.

Rectifier is a device for converting an alternating current into a direct one.

Refraction is a deviation of light passing from one medium into another.

Saturated Vapour is a vapour which is in dynamic equilibrium with its liquid at a given temperature. It can thus hold no more substance in the gaseous phase unless the temperature is raised.

Scalar quantity means quantity which has only magnitude and no direction, e.g., mass, length, etc.

Scattering is the deflection of light energy by fine particles of liquid, solid or gaseous matter from the main direction of a beam.

Short circuit is the direct flow of current between two points of different potential.

Specific heat is the quantity of heat required to raise the temperature of one gram of substance by one degree centigrade.

Static electricity (frictional electricity) is the electricity generated by friction.

Storage battery (accumulator) is a cell which is charged to store electricity by chemical reaction.

Telemetry is a means of making measurement in which the measured quantity is distance from the recording apparatus and the data is sent over

a particular telecommunication system from the measuring position to the recording position.

Total internal reflection is the phenomenon in which light when transversing from an optically denser to an optically rarer medium strikes the common surface of the two media at such an angle that it is reflected completely in the former medium.

Transmutation of elements is change of one chemical element into another.

Ultimate strength is the limited stress at which a material completely fractures or breaks down or crushes.

Ultrasonic means sound waves of high frequency (12,000 cycles per second and higher) inaudible to human ear.

Ultraviolet rays are invisible electromagnetic rays of wavelength less than 3,000 angstrom.

Unsaturated vapour is a vapour at a certain temperature that does not contain the maximum amount of the substance in the gaseous phase.

Velocity is the rate of change of position of a body in a given time in a definite direction.

Viscosity is the property of a liquid tending to resist the relative motion within its layers.

Voltage is the electromotive force in electricity.

Valency is the combining ability of an element with respect to hydrogen (e.g., in water, H_2O , oxygen has a valency of 2).

SIMPLIFIED PHYSICS

Archimedes' principle: The apparent loss in weight of a wholly or partially submerged body in a fluid is equal to the weight of the fluid displaced by it.

Newton's law of gravitation: All particles of matter mutually attract each other by a gravitational force which is directly proportional to the product of their masses and inversely to the square of the distance between them.

Newton's first law of motion: A body in a state of rest cannot move by itself or a body in a state of uniform motion cannot stop by itself unless an external force acts upon it to change its state of rest or uniform motion.

Newton's second law of motion: The rate of change of momentum of a body is directly proportional to the force applied and takes place in the direction in which the force acts.

Newton's third law of motion: To every action there is an equal and opposite reaction.

Laws of refraction of light: (i) A ray of light passing from a rarer medium into a denser medium is deviated towards the normal at the

point of striking the common surface of the two media. When the ray of light passes from a denser medium into a rarer one, the ray is deviated away from the normal. (ii) **Snell's Law:** The ratio of the sine of the angle of incidence to the sine of the angle of refraction is constant and is called the refractive index of the second medium with respect to the first medium.

Laws of reflection of light: (i) The angle of reflection equals the angle of incidence; (ii) the incident ray, the reflected ray, and the normal to the reflection surface at the point of incidence lie in the same plane.

Q. Explain the quantum theory.

A. Quantum Theory: It is a theory which is based on Planck's radiation law. The concept of discontinuity of energy was introduced. According to this theory changes of energy in atoms and molecules occur only in discrete quantities, each an integral multiple of a fundamental quantity. The fundamental quantity is generally referred to as quantum.

Q. Explain what is meant by nuclear fission.

A. Nuclear fission: The splitting of the nucleus of an atom into nuclei of lighter atoms emitting neutrons and accompanied by the release of a large amount of energy is called nuclear fission. Fission may be spontaneous or it may be initiated by the impact of neutrons.

Q. What is nuclear fusion?

A. Nuclear fusion: A thermonuclear reaction in which nuclei of lighter atoms combine to form nuclei of heavier atoms and a large amount of energy is released. For example, deuterium atoms combine to produce helium atoms.

Fusion reactions are considered to be endless source of energy given out by sun.

Q. What is Mach 1 speed of an aeroplane?

A. 760 miles per hour.

Q. What fact or law is associated with the following occurrence? If you jump out of a moving train you will be carried forward in the direction of its movement unless you exercise some force to prevent it.

A. This fact is associated with Newton's first law of motion. According to this law everybody continues in its state of rest or uniform motion in a straight line unless it is compelled by some external force to change that state. The person jumping out of a moving train is carried forward in the direction of the train because the person himself is in motion sharing the velocity of the train and will continue in its state of uniform

motion unless it exercises some force to prevent it.

Q. Under what conditions do a feather and a lump of lead fall at the same rate?

A. A feather and a lump of lead will fall at the same rate when they fall freely under vacuum.

Q. How is the tonnage of a ship related to water displaced?

A. According to the law of floatation a body floats in a liquid if the downward weight of the body is equal to the upward thrust produced by the liquid displaced by it. Thus, the law stipulates that the weight of the water displaced should be greater than or equal to the tonnage of the ship.

Q. Why does a ship rise as it enters the sea from a river?

A. The density of sea water is higher as compared to river water. Consequently, the upthrust produced by the sea water on the ship is greater as compared to the upthrust of river

water. This explains the reason for the rising of ship as it enters the sea from a river.

Q. What fact or law is associated with the rise of balloons in the air?

A. This is in accordance with Archimedes' principle. Balloons are filled with some gas (hydrogen or helium) lighter than air. A balloon filled with gas occupies a large volume. The upthrust produced by the displaced air is much greater than the weight of balloon. Hence, it rises in the air.

Q. Why is it easier to lift a heavy stone under water than in air?

A. According to Archimedes' principle, when a body is immersed either wholly or partly in a fluid at rest it experiences an upward thrust and loses weight equal to the weight of the fluid displaced by its immersed part. Thus when the stone is put under water it loses weight and hence is easier to lift.

7. Chemistry

TERMINOLOGY

Acids are substances which contain hydrogen replaceable by metals and produce hydrogen ions in solution. They are usually corrosive and sour in taste. They turn blue litmus red.

Acid rain means the rain with highly acidic pH due to pollution of atmosphere by oxides of nitrogen and sulphur.

Acid salt is an acid in which only a part of the hydrogen has been replaced by a metal, e.g. sodium bicarbonate.

Allotropy is the phenomenon of existence of an element in more than one form.

Amalgam is an alloy with mercury as one of the metals.

Ceramics means the art or technique of making articles from inorganic compounds formed in a plastic condition and hardened by heating in a furnace. It includes pottery, which uses china clay, ball clay, china stone and flint.

Chemical action means the interaction of two or more substances, resulting in chemical changes in them. It can be of the type of synthesis, analysis or displacement or double decomposition or polymerisation or condensation.

Chemical change is the change which involves a change in its chemical composition.

Compound is a substance made up of two or more elements combined in definite proportions

by weight. It is dissimilar in properties to the constituent elements.

Deliquescence is the property of a substance of absorbing moisture from the air on exposure.

Desiccation means the process of drying. It refers to the removal of moisture.

Dimorphism is the quality of assuming two distinct forms (e.g., carbon as graphite and as diamond).

Dry ice is liquefied gas under a pressure of 58 atmospheres. It falls to the bottom in the form of 'snow' compressed into blocks when subjected to a sudden release of pressure.

Ductility refers to property of metals and alloys of being drawn into wires.

Efflorescence is the special property some hydrated substances have of losing their water and assuming the form of powder on exposure to air, e.g., sodium carbonate.

Element is a substance, incapable of being split up into simple substances, e.g., oxygen, etc.

Hard water is water which does not form lather with soap because it has calcium and magnesium which curdle soap.

Heavy water (deuterium oxide) is a liquid similar to ordinary water. It is used in atomic reactors.

Hydrolysis is chemical decomposition of a substance by water.

Hydrogenation is the process of subjecting any compound to the chemical action of, causing to combine with, hydrogen.

Isotopes are atoms of the same element having the same atomic number but different atomic weights.

Molecule is the smallest particle of a substance. It is capable of independent existence and has all the properties of the original substance.

Ore is the mineral from which a metal can be extracted.

Organic compounds are chemical compounds in which carbon is linked with hydrogen or other elements.

Osmosis is the flow of a solvent through a membrane that permits the passage of the solvent but not of dissolved substances.

Radical is an element or atom or a group of these that forms the base of a compound and is unaffected by its ordinary chemical changes.

ELEMENTS, COMPOUNDS AND MIXTURES

The world we live in contains a large number of rings, also called substances, such as air, water, earth, wood, metals, etc., etc. All these substances can be classified into elements, compounds and mixtures. Elements and compounds form the homogeneous matter. The mixtures, on the other hand, can be homogeneous or heterogeneous.

Elements: An element is a homogeneous substance that cannot be subdivided or broken down to yield simpler matter or substances, through ordinary chemical methods. Every element is composed of only one type of atoms. Substances like, carbon, sulphur, iron, gold, silver, mercury, etc. are examples of elements. There are around 105 elements known at present. Of these, 89 elements occur naturally, i.e., they are found in nature. The remaining ones are man-made elements and are called transuranics, and are produced either in nuclear reactors or isolated from the nuclear explosions. The elements are regarded as the building blocks from which all forms of matter are constructed. The following table gives a list of the elements and their symbols. A symbol is a mere representation of an element, denoting more precisely one atom of the element.

ELEMENTS AND THEIR SYMBOLS

<i>Element</i>	<i>Symbol</i>
Actinium	Ac
Aluminium	Al
Americium	Am
Antimony	Sb
Argon	Ar
Arsenic	As
Astatine	At
Barium	Ba
Berkelium	Bk
Beryllium	Be
Bismuth	Bi
Boron	B
Bromine	Br
Cadmium	Cd
Calcium	Ca
Californium	Cf
Carbon	C
Cerium	Ce
Cesium	Cs
Chlorine	Cl
Chromium	Cr
Cobalt	Co
Copper	Cu
Curium	Cm
Dysprosium	Dy
Einsteinium	Es
Erbium	Er
Europium	Eu
Fermium	Fm
Fluorine	F
Francium	Fr
Gadolinium	Gd
Gallium	Ga
Germanium	Ge
Gold	Au
Hafnium	Hf
Helium	He
Holmium	Ho
Hydrogen	H
Indium	In
Iodine	I
Iridium	Ir
Iron	Fe
Krypton	Kr
Lanthanum	La
Lawrencium	Lr
Lead	Pb
Lithium	Li
Lutetium	Lu
Magnesium	Mg
Manganese	Mn
Mendelevium	Md

Element	Symbol
Mercury	Hg
Molybdenum	Mo
Neodymium	Nd
Neon	Ne
Neptunium	Np
Nickel	Ni
Niobium	Nb
Nitrogen	N
Nobelium	No
Osmium	Os
Oxygen	O
Palladium	Pd
Phosphorus	P
Platinum	Pt
Plutonium	Pu
Polonium	Po
Potassium	K
Praseodymium	Pr
Promethium	Pm
Protactinium	Pa
Radium	Ra
Radon	Rn
Rhenium	Re
Rhodium	Rh
Rubidium	Rb
Ruthenium	Ru
Samarium	Sm
Scandium	Sc
Selenium	Se
Silicon	Si
Silver	Ag
Sodium	Na
Strontium	Sr
Sulphur	S
Tantalum	Ta
Technetium	Tc
Tellurium	Te
Terbium	Tb
Thallium	Tl
Thorium	Th
Thulium	Tm
Tin	Sn
Titanium	Ti
Tungsten	W
Uranium	U
Vanadium	V
Xenon	Xe
Ytterbium	Yb
Yttrium	Y
Zinc	Zn
Zirconium	Zr

Compounds: A compound is a homogeneous substance that can be decomposed into two or more substances by a chemical change. Every compound is composed of two or more elements, chemically combined in a definite proportion by weight. When a compound is formed, the individual elements forming the compound lose their own identity and characteristics. Thus, the compound has properties entirely different from those of the elements forming it. All samples of a particular compound have identical properties and composition. Water, sugar, salt, etc., are examples of familiar compounds. The composition of each compound is represented by its formula, e.g., water (H_2O), sugar ($C_{12}H_{22}O_{11}$), salt ($NaCl$), carbon dioxide (CO_2), limestone ($CaCO_3$) etc. The total number of known chemical compounds runs almost into a million.

Mixtures: A mixture is composed of two or more different substances, each of which retains its own characteristics, properties and composition. A mixture is obtained by mixing up various substances in any proportion, with no chemical reaction in between them. For example, air is a mixture of gases, water vapour and dust particles; gun powder is a mixture of sulphur, charcoal and nitre (potassium nitrate); milk is a mixture of water, proteins, fats and carbohydrates. An idea about which is an element, compound or mixture, can be had from the following table.

Elements	Compounds	Mixtures
copper	common salt	brass
iron	sugar	glass
nitrogen	carbon dioxide	ink
oxygen	water	air
tin	marble	soil
zinc	baking soda	milk

Types of Elements

Elements are classified as metals and non-metals. About 80 per cent of the elements are metals.

Metals: Metals are electropositive elements which have a tendency to lose electrons from their valence shells, forming positively charged ions called 'cations'.



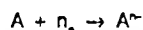
Common examples of metals are copper, gold, iron, aluminium, calcium, tin, sodium, silver, zinc, etc. Metals are solid at room temperature with the exception of mercury and gallium which are liquids. Metals are generally hard, ductile and malleable. They are good conductors of heat and electricity and have lustrous appearance. The following table shows the names and symbols of some metals.

METALS AND THEIR SYMBOLS

<i>Metal</i>	<i>Symbol</i>
Actinium	Ac
Aluminium	Al
Americium	Am
Antimony	Sb
Barium	Ba
Berkelium	Bk
Beryllium	Be
Bismuth	Bi
Cadmium	Cd
Caesium	Cs
Calcium	Ca
Californium	Cf
Cerium	Ce
Chromium	Cr
Cobalt	Co
Copper	Cu
Curium	Cm
Dysprosium	Dy
Einsteinium	Es
Erbium	Er
Europium	Eu
Fermium	Fm
Francium	Fr
Gadolinium	Gd
Germanium	Ge
Gold	Au
Hafnium	Hf
Holmium	Ho
Indium	In
Iridium	Ir
Iron	Fe
Lanthanum	La
Lawrencium	Lr
Lead	Pb
Lithium	Li
Lutetium	Lu
Magnesium	Mg
Manganese	Mn
Mendelevium	Md
Mercury	Hg
Molybdenum	Mo
Neodymium	Nd
Neptunium	Np
Nickel	Ni
Nobelium	No
Osmium	Os
Palladium	Pd
Platinum	Pt
Plutonium	Pu
Polonium	Po
Potassium	K
Praseodymium	Pr
Promethium	Pm
Protactinium	Pa

<i>Metal</i>	<i>Symbol</i>
Radium	Ra
Rhenium	Re
Rhodium	Rh
Rubidium	Rb
Ruthenium	Ru
Samarium	Sm
Scandium	Sc
Silver	Ag
Sodium	Na
Strontium	Sr
Tantalum	Ta
Technetium	Tc
Terbium	Tb
Thallium	Tl
Thorium	Th
Thulium	Tm
Tin	Sn
Titanium	Ti
Tungsten	W
Uranium	U
Vanadium	V
Ytterbium	Yb
Yttrium	Y
Zinc	Zn
Zirconium	Zr

Non-Metals: Non-metals are electronegative elements which have a tendency to gain one or more electrons to form negative ions called 'anions'.



Non-metals generally exist as powders or gases with the exception of bromine which is liquid under normal conditions. Non-metals are non-lustrous and are bad conductors of heat and electricity. They cannot be hammered into sheets or drawn into wires. Non-metals have lower melting points than the metals. The following table shows the names and symbols of some non-metals.

NON-METALS AND THEIR SYMBOLS

<i>Non-metal</i>	<i>Symbol</i>
Arsenic	As
Astatine	At
Bromine	Br
Carbon	C
Chlorine	Cl
Fluorine	F
Hydrogen	H
Iodine	I
Nitrogen	N
Oxygen	O
Phosphorus	P
Selenium	Se
Sulphur	S
Tellurium	Te

Some elements behave chemically both as metals and non-metals. Such elements are called metalloids. Examples of metalloids are boron, silicon, germanium, antimony.

There are some elements which are neither metals nor non-metals. These elements are called 'Noble-Gases' and are present in the atmosphere. Helium, argon, neon, krypton, radon and xenon are examples of noble gases.

CHEMICAL FORMULA

The chemical formula represents one molecule or the smallest particle of any substance (element or compound). It denotes the different elements present in the substance and the number of atoms of each element in it. The following table shows the chemical names and formulae of some commonly known compounds :-

CHEMICAL NAMES AND FORMULAE OF SOME COMMONLY KNOWN COMPOUNDS

Common name	Chemical name	Formulae
Baking powder	Sodium bicarbonate	NaHCO_3
Baryte	Barium sulphate	BaSO_4
Bleaching powder	Calcium hypochlorite	Ca(OCl)_2
Blue vitriol	Copper sulphate	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
Candy fluid	Potassium permanganate	KMnO_4
Caustic lotion	Silver nitrate	AgNO_3
Caustic soda	Sodium hydroxide	NaOH
Chile saltpetre	Sodium nitrate	NaNO_3
Chloroform	Trichloromethane	CHCl_3
Common salt	Sodium chloride	NaCl
Epsom salt	Magnesium sulphate	$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$
Glauber's salt	Sodium sulphate	$\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$
Green vitriol	Ferrous sulphate	$\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$
Gypsum	Calcium sulphate	$\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
Hydrogen peroxide	Hydrogen peroxide	H_2O_2
Hypo	Sodium thiosulphate	$\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$
Laughing gas	Nitrous oxide	N_2O
Lime water	Calcium hydroxide	Ca(OH)_2
Limestone	Calcium carbonate	CaCO_3
Muriatic acid	Hydrochloric acid	HCl
Plaster of Paris	Calcium sulphate	$2\text{CaSO}_4 \cdot \text{H}_2\text{O}$
Quick lime	Calcium oxide	CaO
Red lead	Triplumbic tetroxide	Pb_3O_4
Salt ammoniac	Ammonium chloride	NH_4Cl
Saltpetre (Nitre)	Potassium nitrate	KNO_3
Sulphuric acid	Sulphuric acid	H_2SO_4
Soda bicarb	Sodium bicarbonate	NaHCO_3
Washing soda	Sodium carbonate	$\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
Water	Hydrogen oxide	H_2O

SIMPLIFIED CHEMISTRY

Q. Why does an iron nail gain weight by rusting?

A. When iron is left exposed to air and moisture, it gets rapidly oxidised. This is known as rusting of iron. The chemical composition of rust varies somewhat but it consists mainly of hydrated ferric oxide ($2\text{Fe}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$) and a small amount of ferrous carbonate (FeCO_3). The increase in the weight of iron nails is, therefore, equal to the amount of oxygen and water vapours

taken up from the atmosphere.

Q. Why is it dangerous to have a charcoal fire burning in a badly ventilated room?

A. The burning charcoal produces carbon monoxide which is a poisonous gas. If there is no escape for the gas it will fill up the room and suffocate us.

Q. How does a refrigerator keep food fresh?

A. Food remains fresh till the chemical decomposition is caused by the presence of micro-organisms. The function of refrigeration

maintain low temperatures. The activity of micro-organisms is considerably reduced at lower temperatures and, therefore, food can remain fresh for a considerable length of time.

Q. Why is sea water saline?

A. The rivers have been carrying soluble minerals from the mountains and other areas into the sea throughout the ages. Evaporation does not remove these minerals brought down by rivers. Hence, the sea water is saline, i.e., it contains salts.

Q. Why is fire extinguished by soda bicarbonate?

A. Soda bicarbonate decomposes on heating and produces carbon dioxide gas. The gas is neither combustible nor a supporter of combustion but extinguishes the fire quickly.

Q. What are Gamma Rays?

A. Gamma Rays: These are short-wave electromagnetic radiations similar to light and X-rays. The penetrating power of these rays is extremely high, even greater than X-rays. They can penetrate through 6 inches of steel. Gamma rays are not deflected by strong electric or magnetic field. However, these are harmful to living tissues.

Q. What is a liquid?

A. It is a state of matter intermediate between a gas and a solid. A liquid may be considered as a condensed gas or a molten solid. The molecules are rigidly fixed in a solid and, therefore, it has a definite shape as well as volume. The molecules are free to move in a gas and, therefore, it has neither a definite volume nor a definite shape. The molecules are relatively free to move in a liquid but this freedom is much more restricted on account of cohesive forces. A liquid, therefore, has a definite volume but no definite shape. A liquid takes the shape of the vessel in which it is poured. It is only slightly compressible.

Q. Why do dirty clothes become clean when put in hot water and washing soda?

A. Dust and dirt particles get attached to grease or oily materials which somehow gather on clothes. It is not possible to clean the clothes simply by dipping in water because grease is not easily wetted by water. The addition of washing soda reduces the interfacial tension between water and grease and this results in emulsification of grease in water. On rubbing or beating the clothes the dirt is released easily.

The whole process mentioned above becomes easier in hot water. Moreover, washing soda is also helpful in softening hard water.

Q. Explain briefly what is meant by the following:

(a) Stainless steel; (b) Sulphonamide.

A. (a) Stainless steel: It is an alloy steel containing generally 18% chromium and 8% nickel. This variety of steel is corrosion resistant, hard and used in the manufacture of surgical instruments, kitchen wares, cutlery, etc.

(b) Sulphonamide (Sulpha drugs): Generic name for an anti-bacterial substance derived from para-aminobenzeno sulphonamide (or a group of organic compound containing the sulphonamide group SO_2NH_2 or its derivatives). It includes sulphanilamide ($\text{NH}_2\text{C}_6\text{H}_4\text{SO}_2\text{NH}_2$), sulphapyridine ($\text{NH}_2\text{C}_6\text{H}_4\text{SO}_2\text{NHC}_5\text{H}_4\text{N}$) and many more. These medicines are used in the treatment of various bacterial diseases, wounds, burns, etc.

Q. Why is rain water soft but river water hard?

A. The process of evaporation of water continuously goes on from the surface of ponds, lakes, rivers, seas, etc., leaving behind salts. These water vapours appear in the form of clouds and ultimately come down as rain water. The rain water, being free from salts, is considered to be the purest form of water.

River water is mainly rain water. Water obtained on the melting of snow also flows through streams of rivers. Surface water, as it flows, carries with it soluble minerals of the earth. Rapidly flowing rivers carry clay and small bits of sand in suspension. The rivers, passing through populated or industrial areas, may contain organic matter and may also be contaminated with bacteria. Thus, river water is considered to be hard due to the presence of salts and other impurities.

Q. Why does silver tarnish?

A. Silver is tarnished due to the presence of hydrogen sulphide in air, which forms black silver sulphide.

Q. Write a short note on Radioactivity.

A. Radioactivity: The French physicist Becquerel in 1895 observed that uranium salts emitted certain rays which had penetrating properties similar to X-rays and caused ionisation of air. He called these rays as radioactive rays and the property of giving out these rays is known as radioactivity. At present 40 natural and a large number of artificial radioactive elements are known.

Three kinds of rays are emitted by radioactive elements. These are called alpha-rays, beta-rays and gamma-rays. These rays differ from one another in their ionisation power, deflection in electric and magnetic fields.

8. Biology

BOTANICAL TERMS

Aberration : It is a peculiarity of an individual plant, usually due to some environmental factor.

Abjection : It is the separation of a spore from its stalk, forcibly by the fungus.

Aceraceae : It refers to the family of the spineless trees or shrubs. The leaves of these trees or shrubs are simple, lack stipules, pinnate and are opposite.

Adermin : It refers to a vitamin necessary for the growth of lactic acid bacteria, certain yeast and fungi.

Adesmy : It refers to an abnormal condition in a flower, when parts that are normally united are separate.

Adnate : It refers to a condition in flowers where two or more whorls fuse together to greater or lesser extent.

Afgae : There are flowerless plants living mostly in water possessing chlorophyll.

Allopatric species : It refers to the species inhabiting different geographical areas.

Alpine : It refers to vegetation on high mountains beyond timber line.

Angiosperms are flowering plants with seeds enclosed inside fruits.

Bacillus : Any rod shaped bacterium.

Bacteria : They are unicellular plants without chlorophyll. They reproduce by binary fission and are probably related to the fungi. Most are saprophytic or parasitic, but some are autotrophic.

Biome : A large community of plants and animals, characterised by its particular type of dominant vegetation and its associated animals, e.g., tundra.

Biotype : The group of individuals with same genetic composition.

Binomial system : System of classification in which there are two names, one generic and other specific.

Brood cell : A naked or walled cell which is produced asexually, and separating from the parent plant to give rise to a new individual.

Caffeine : A growth-promoting substance. Rhizocaulines promote root growth and caulocalines promote stem growth.

Callus : A more or less corky secondary tissue developed by woody plants over a wound. It is usually derived from a cambium.

Cellulose : A condensation product of a various number of glucose units, giving a fibrous structure.

Cell wall : The bounding layer of plant cells. It may be made of cellulose or chitin. It gives mechanical support to the cell.

Chlorophyll is a green pigment in green plants which absorbs sunlight and builds up sugar.

Chlorosis : Loss of chlorophyll from leaves due to some mineral deficiency or infection.

Conidia : Asexual reproductive cell of fungi.

Conjugation : Process of sexual reproduction involves the fusion of isogametes or even gametangia.

Cork : An external secondary tissue impermeable to water and formed by cambium.

Cryptogams are flowerless plants.

Deciduous : Trees showing leaf fall in winter season.

Dermatophyte : A fungus causing skin disease.

Defoliation : It refers to the shedding of leaves.

Denitrification : Conversion of nitrates into nitrite or gaseous oxides or free nitrogen.

Dichogamy : Condition in which male and female parts of flower mature at different times. Prohibits self-pollination.

Dystrophy : Insects removing the nectar from a flower by some abnormal method, and consequently not operating the pollinating mechanism.

Ectogenic : It describes the effect of pollen on the tissues of the female organs of a flowering plant.

Ectophloic : It is said for a vascular bundle that has phloem only on the outside of the Xylem.

Emasculation : Process of removing stamens during hybridisation.

Embryosac : A female gametophyte of angiosperms.

Epinasty : More rapid growth of upper side of an organ.

Epigyny : The arrangement of floral parts in which the ovary is embedded in the receptacle so that the other parts appear to arise from the top of the ovary.

Epiphyte is a plant that grows upon another plant; also a vegetable that derives nourishment from it. Parasite on animal.

False fruit : A fruit formed from other parts of the flower as well as the gynoecium.

Fascicle : A bundle of pine or other needle like leaves of gymnosperms.

Feral : A cultivated plant, becoming wild owing to discontinuous cultivation.

Flora is the whole assemblage of the plant life of a region.

Fungi are simple plants with chlorophyll.

Funicle : The stalk of an ovule, by which it is attached to the placenta.

Gamogastrous : It is said of a syncarpous gynecium in which the ovaries are fused, but the styles and stigma are free.

Gampetalous : It refers to a flower which has the sepals fused, or partly so.

Gene flow : Movement of genes, as a result of mating and exchange within population.

Graft : A small piece of meristematic tissue, e.g. a bud or growing shoot, called the scion, is made to unite with a larger established plant, called the stock.

Guttation : Exudation of water from plants in the form of droplets.

Gymnocyte : A cell without a cell wall.

Gymnoplasm : An amorphous mass of naked protoplasm.

Gymnosperms are plants with naked seeds, i.e., seeds not enclosed in fruits.

Halophyte : Plants growing in saline conditions.

Haplontic : Kind of life cycle with dominant haploid phase.

Haplotropism : Movement of plant organ influenced with a foreign body.

Histology : The study of individual tissues.

Histolysis : The disintegration of tissues, due to the disappearance or solution of the walls or tissues.

Holocarpic : A condition in which complete thallus changes into reproductive body.

Homoeosis : A type of variation in which a plant member takes on the character of an unlike member, e.g., when a petal changes into a stamen.

Humus : It is the rich soil made of decayed plant, leaves, etc.

Hydrophily : Pollination through the agency of water.

Hydrophyte : It is a plant adapted for growth in water or in a wet soil.

Hydroponics : It is the system of growing plants through water culture methods.

Hydrotropism : It is the response of a plant organism to moisture or water.

Imbibition : This is a physical process which involves absorption of liquids into ultramicroscopic spaces and causes their swelling.

Incubous : It refers to the leaf of a liver wort, when its upper border overlaps the lower border of the next leaf above it and on the same side of the stem.

Isobrachial : It refers to chromosome which is bent into two equal arms.

Isostemonous : Having as many stamens as petals and in a whorl.

Jugum : A pair of opposite leaves.

Juvenile form : A young plant that has leaves and other features different from those of a mature plant of the same species.

Karyaster : A group of chromosomes arranged like the spokes of a wheel.

Karyogamy : The fusion of two nuclei, especially gametic nuclei.

Karyorhexis : The disintegration of the chromatin of the nucleus into darkly staining granules, during the necrosis of the cell.

Kojic Acid : An acid produced exclusively by the white-spored *Aspergillus* spp.

Lamella : It refers to a plate like structure in the grana and stroma in the chloroplast.

Latex : A milky fluid containing sugars, proteins, alkaloids, oil, etc. produced in latex vessels of many plants.

Legume : A member of the Leguminosae, also a dry fruit consisting of 1 carpel, splitting by 2 longitudinal sutures at dehiscence, and having a row of seeds on the inner side of the ventral suture, e.g., a pea-pod.

Lichens : A group of composite plants, consisting of an alga and a fungus in intimate association.

Lignin : A complex carbohydrate deposited in the cellulose micella of the cell-walls of woody tissue.

Lycomarasmin : A toxic product of *Lycopersicon*. It causes wilting of tomatoes, by affecting the permeability of the membranes.

Lyrate : It is said of a leaf which is pinnately lobed, and has a terminal lobe which is much larger than the lateral lobes.

Lysis : A process in which cells disintegrate.

Macrandrous : An algae (*Oedogonium*) which do not produce dwarf male filaments.

Macrogamete : It refers to a large gamete containing food reserves, i.e. the female gametes.

Medulla : Central core of parenchymatous cells mostly present in the dicot stem and monocot root.

Mesogamy : The entry of pollen tube into the ovule through integuments.

Mesophyll : Parenchymatous tissue present between upper and lower epidermis of leaves.

Monocarpic : Flowers only once in complete life cycle.

Monochlamydous : Flowers having one whorl of perianth.

Monoclinous : A condition when stamens and pistil are present on same flower.

insects and produces enzymes which digest the prey.

Thallophyte : It is a group of plants having simple plant body without root, stem and leaves (algae, fungi, etc.).

Translocation : Exchange of chromosome part between two non-homologous chromosomes.

Transduction : Transfer of genetic information through the agency of virus.

Transformation : Mutation in gene of bacteria by the direct intervention of extracellular DNA.

Uredostage : It refers to the phase in the life history of a rust fungus when uredospores are formed.

Urticle : It refers to a small fruit with the pericarp free from the seed.

Vacuole : It refers to a fluid-filled space in a cell. A single vacuole, taking up most of the volume of the cell is present in many plant cells, and contains a cell-sap which is isotonic with the protoplasm.

Villus : A thin branching outgrowth from the 'stem' of a moss.

Viscin : It refers to the sticky substance produced in the fruits of mistletoe.

Viviparous : It is said of a seed which germinates before it is detached from the parent plant.

Xenogamy : It refers to pollination of a flower from a flower of the same species, but another plant.

Xeromorphic : It is said of plants which are protected from loss of water by unusual morphological characteristics.

Xerophyte is a plant adapted to live in dry places.

ZOOLOGICAL TERMS

Actomyosin refers to a complex of two proteins, actin and myosin, which is the major constituent of muscle. The contraction of muscles is due to the shortening of actomyosin fibrils.

Allergy refers to excessive sensitiveness to the action of some foods or other substances, normally harmless. Allergic disorders include skin rashes, asthma and digestive disturbances.

Amphibia refers to the group of vertebrate animals which are equally at home in water and on land and their skin lacks hair, e.g., frogs and toads.

Antibiotics refer to any drug, derived from living organisms, with a specific action against bacteria. Penicillin, derived from a fungus, serves as an example.

Antibiotics refers to specific substances produced by animal tissues, capable of neutralising

or giving immunity against the specific antigen. Immunity to disease by vaccination and inoculation is due to anti-bodies.

Arthropods are a group of invertebrate animals which have segmented body and jointed limbs (mosquito, fly, spider, etc.).

Atrophy refers to wasting away of flesh due to imperfect nourishment.

Autolysis refers to the disintegration of cells or tissues by endogenous enzymes. By this process, some defective or injured organisms break down into constituents like proteins, lipids and carbohydrates and are eaten up by the healthy cells, i.e., digested and used in the synthesis of new cells.

Aves refer to a group of vertebrate animals including flying and non-flying birds.

Chordate refers to the major division of animal kingdom which includes man and all mammals, birds, amphibians, reptiles and fishes.

Chromosomes refers to rod-like or thread-shaped bodies, hundreds of which are found in the nucleus of every animal or plant cell carrying genotic materials.

Claustrophobia is a disease or an abnormal fear of being in an enclosed or confined place.

Colic is severe abdominal pain due to spasm of an involuntary muscle. It may be caused by indigestible food, constipation or diarrhoea.

Concussion is shock injury to brain caused by heavy blow.

Delirium refers to disordered mental state accompanied by tremors, hallucinations and sleeplessness. It may be caused by alcoholic excesses or due to several other disorders.

Dropsy is a disease characterised by collection of watery fluid in cavities or tissues of the body.

Hibernation is the period of dormancy in winter occurring in some mammals and in most reptiles and amphibians in colder parts of the world.

Mammal refers to the group of animals which include backboneed hairy animals suckling their young.

Mollusca are animals having a soft, unsegmented body usually covered with a hard shell (snails, mussels, etc.).

Mutation is the discontinuous variation or sudden inheritable divergence of characteristics from ancestral type.

Pisces is a group of vertebrates living in water including fishes, e.g., lamprey, sea horse, shark, etc.

Protozoa refers to animals of microscopic size; they are mostly unicellular animals like trypanosoma, amoeba, etc.

Reptiles is a group of vertebrate animals which creep or crawl (snake, lizard, alligator, etc.).

Vertebrate refers to the major division of chordate animals whose backbone consists of vertebra.

IMPORTANT ANIMALS

Albatross: Large sea bird.

Alpaca: South American mammals supplying long, silky wool.

Amoeba: A microscopic animalcule perpetually changing shape. Its body has a simple structure consisting of jelly-like protoplasm and a nucleus.

Beaver: A vegetarian fur-bearing mammal. It lives in burrows on river banks.

Chamois: Small, goat-like antelope of the mountains of Europe and South-West Asia

Cod: A fish which may reach four feet in length and weigh 100 lbs.

Coral: The skeleton-like substance produced by coelenterate animals in seas.

Electric ray: A fish having an organ that gives electric shock.

Elk: Large deer of North Europe and Asia.

Emu: Flightless Australian bird like an ostrich but smaller.

Fulmar: An Arctic bird. It feeds on dead seals and whales

Giraffe: Hoofed mammal with a long neck.

Gnu: Large African antelope.

Hamadryad: A poisonous snake found in India.

Ibex: Wild goat found in Europe, Asia and Africa

Kangaroo: Mammals of Australia and New Guinea. They have small forelegs and hindlegs, which give great leaping power. The female Kangaroo has a pouch in front to carry the young ones.

Koala: Grey furry mammal of Australia.

Kiwi: Wingless bird of New Zealand with feathers.

Lampreys: Fish-like creatures without jaws.

Leeches: Worms living in ponds and streams which suck the blood of animals.

Llama: South American mammal somewhat resembling a camel but without hump.

Muskdeer: Small hornless Central Asian deer; the male has a gland containing strong scent of musk.

Mustang: A wild American horse.

Nightingale: A singing bird of India.

Octopus: Sea mollusc having eight tentacles.

Oryx: Mammal of West African forests, like giraffe but with a shorter neck.

Ostrich: A tall African and Arabian bird which cannot fly but runs swiftly.

Pelican: The large, fish-eating water bird with a pouch for storing food.

Penguin: A sea bird found in the southern hemisphere.

Puma: A large American wild cat.

Reindeer: A large deer with branching horns, found in Siberia.

Rhea: A South American bird like the ostrich but smaller.

Rhinoceros: Thick-skinned large mammal of Africa and Asia with one or two upright horns on the snout.

Salamander: An animal shaped like a lizard. But it belongs to the group of amphibia.

Salmon: A fish with silvery scales.

Sea horse: Small fish having a head like that of a horse.

Seal: A carnivorous sea mammal.

Sea lion: Large seal from the Pacific coast of America.

Shark: A large-carnivorous fish of tropical seas.

Trout: A fresh water food fish.

Yak: A large haired ox of Tibet and Central Asia.

Yeti: A creature stated to be half man and half beast believed by people to be living in the vicinity of Mount Everest.

Walrus: Large sea mammal of the Arctic regions, resembling a seal.

Zebra: African donkey with dark and white stripes.

Q. Write briefly on Theory of Evolution.

A. Evolution Theory: Evolution means the descent of a new form (whether plant or animal) from the pre-existing one. In 1859 Charles Darwin put forward his famous Theory of Natural Selection to explain the organic evolution. According to this theory, the animals and plants are very fertile and the excessive multiplication results in the struggle for existence, e.g., every individual puts efforts to get space to live, food to eat, mate to reproduce and protection from enemies. Variation is the law of nature. Variations occur even in animals which may be most closely related. Some of these variations may prove favourable to give the animal some characteristics which may help in the struggle to survive. These favourable characteristics help in the survival of the fittest and are, therefore, passed on from generation to generation. The sorting out of the individuals with useful variations has been called natural selection by Darwin. Wallace called it survival of the fittest. Nature selects and preserves certain variations and weeds

out the less well-adapted ones like a breeder or a gardener.

Darwin's theory may be summarised as under:

(1) A rapid increase in numbers results in struggle for existence because total numbers remain nearly constant.

(2) Struggle for existence coupled with variation on account of heredity results in the survival of the fittest.

(3) Survival of the fittest adjusting to change of environments results in structural modifications leading to origin of new species.

Q. Explain briefly the code of life (or genetic code).

A. The scientific study of heredity, first scientifically found concepts, those of Mendel indicated that characters are inherited as units independent of each other. Studies of chromosomes, genes, mitome, mitosis and sex-linked characters shed further light on the mechanism of heredity.

Q. Write a short note on bacteria.

A. These are very tiny organisms which belong to the vegetable kingdom. These can be seen with the help of microscope only. These are of two types:

(i) Friend bacteria do not cause any disease but resist the attack of enemy bacteria.

(ii) Foe bacteria cause diseases in living bodies, both human beings and animals. These are generally known as germs.

Q. What are Chromosomes?

A. Chromosomes: These are thread-shaped bodies consisting mostly of DNA and proteins, a number of which are present in the nucleus of every animal or plant cell. The basic unit of genetic formation is the gene and each chromosome may be considered as composed of a number of genes. Chromosomes occur in pairs, generally several different pairs per nucleus. In somatic cells of animals and higher plants. Each organism of a species is normally characterised by the same number of chromosomes in its somatic cells. The number normally present in man is 46 including the two (X and Y) which determine the sex of the organism.

Q. What is meant by pasteurised milk?

A. The milk is exposed to a high temperature for a given period of time to destroy certain micro-organisms and prevent or arrest fermentation.

Q. What is ecology?

A. It is the branch of biology dealing with how and where living organisms live and how they

interact with, and are dependent on each other. Recently, the term has been applied to the study of how pollution and other factors affect the habitat of living organisms.

Q. Why are flowers brightly coloured?

A. The flowers contain pollen and inter-mixing of pollen is essential for reproduction of vegetation. Pollen is carried from one plant to another by bees and other insects which move from one flower to another. The beautiful colours tend to attract the bees and other insects towards the flowers.

Q. What is Photosynthesis?

A. The process by which plants absorb sugar and starch by means of sunlight is called photosynthesis. The action is due to presence of chlorophyll.

Q. What is Hybridisation?

A. Hybridisation: The process in which offspring are formed from a cross fertilisation between more or less distantly related parents is called hybridisation. The parental individuals may belong to different varieties, races and species.

Q. Write a note on Hibernation.

A. Hibernation: The animals which live underground for certain period of a year are called hibernating, e.g., frog. It is, in fact, a period of long sleep in which the metabolic activity in the animals becomes low and hence they do not need to eat or drink during this period. When the animals awake from hibernation, they are very weak and take some time to recover.

Q. Why does the pouring of kerosene oil on stagnant pools help to eradicate malaria?

A. The stagnant pools are the breeding ground of mosquitoes which are carriers of malaria. The larvae of mosquitoes grow up in water and they have to come to the surface in order to breathe. The kerosene oil sprayed on the water provides a thin coating and the larvae are prevented from coming up to breathe. Thus, they die. By eradicating the larvae in this manner, the outbreak of malaria is controlled.

Q. Explain briefly what is meant by Virus.

A. Virus: An infectious agent that reproduces only in living cells. It is too small in size to be seen by an ordinary microscope but visible with an electron microscope. The individual particle of elementary body consists of DNA or RNA, but not both, and coated with protein molecules. Viruses are believed to be on the borderline between the animate and the inanimate.

9. Physiology and Health

PHYSIOLOGICAL TERMS

Abdomen is the large interior cavity of the body extending from the brim of the pelves to the diaphragm.

Aorta is the large trunk emerging from the left ventricle of the heart. It distributes purified blood through its branches all over the body.

Aqueous humour is the transparent fluid of the anterior chamber of the eye.

Arteries are blood vessels carrying blood away from the heart.

Arthritis is the inflammation of joints due to infection, metabolic or constitutional causes.

Auricles are two upper chambers of the heart into which the blood comes from the veins.

Bile is the secretion of the liver poured into duodenum. It is alkaline and is helpful in digestion, absorption and excretion.

Blood is a red-coloured fluid circulating through the heart, arteries, capillaries and veins. One cubic millimetre of normal blood contains about 5,000,000 red corpuscles and 6,000 white corpuscles. The red colour of the blood is due to the presence of a pigment known as haemoglobin. The arterial blood is of bright red colour and the venous blood is of dark red colour. The total amount of blood in a body is equal to about one-twelfth of the weight of the body.

Blood count is the determination of the number of white and red corpuscles in a cubic millimetre of blood.

Cerebrum is the chief and largest part of brain which occupies the upper and frontal two-thirds of the brain covering all other parts of brain.

It is also the centre of intelligence, coordination, memory, will, imagination, etc. It controls voluntary action as well.

Duodenum is the first part of the small intestine where pancreatic juice helps in the digestion of food.

Enzyme is a catalytic substance promoting a chemical change in human body. These are contained in juices secreted by different glands which help in the digestion of food.

Epilepsy is the disorder marked by disturbed electrical rhythms of the central nervous system and typically manifested by convulsive attacks usually with clouding of consciousness.

Gall bladder is the pear-shaped pouch situated at the lower border of the liver for the storage of bile and the secretion of mucous.

Gastric juice is a secretion of glands in the stomach. It contains hydrochloric acid which destroys bacteria contained in the food and enzymes which help in digesting proteins and fats.

Haemoglobin is a pigment present in blood.

Kidney are a pair of bean-shaped glandular organs responsible for the excretion of urine, maintenance of blood reaction, water balance and concentration of blood. The excretory products formed in the body are conveyed to the kidneys where these are filtered and waste eliminated as urine.

Pancreas is the long, yellowish gland across the posterior wall of the abdomen secreting pancreatic juice which digests proteins, fats and carbohydrates.

Parathyroid glands are small endocrine glands near the thyroid glands. The hormones secreted by them regulate the ratio of calcium in blood and growth of body.

Prostate glands are the sex glands surrounding the beginning portion of urethra.

Pulmonary veins emerge out of lungs. They carry purified blood from the lungs to the left auricle from where it goes to the left ventricle.

Retina is the light-receptive layer in the eye. It is composed of rods and cones. Rods are concerned with vision in dim light whereas cones are sensitive to colours and bright light.

Spleen is the largest lymphatic organ of the body located immediately below the diaphragm on the left side. Formation of red blood cells, storage of blood and destruction of corpuscles are some of its main functions.

Thyroid glands are the small ductless glands on either side of the windpipe in the neck. The hormones secreted by it contain 65 per cent of iodine. Its deficiency causes dwarfism in children and goitre in adults.

Veins are the blood vessels which carry blood back to heart from different parts of the body.

Ventricles are the two lower chambers of the heart from which purified blood flows out through arteries.

Vitreous humour is the transparent fluid in the posterior chamber of the eye.

DIGESTIVE SYSTEM

Organs for digestion: The organs concerned with the digestion of our food are teeth, gullet,

oesophagus, stomach, small intestine, large intestine and pancreas.

Secretions helping digestion: Three organs of the body, by their secretion, help in the digestion. They are: (1) stomach secreting the gastric juice; (2) pancreas secreting the pancreatic juice; and (3) liver secreting the bile.

Alimentary canal: It is a long coiled tube starting from mouth and ending at anus and consisting of gullet, oesophagus, stomach, small intestine, large intestine and rectum.

Small intestine: Food from the stomach passes into the small intestine and is mixed with bile and pancreatic juice coming from liver and pancreas. Bile has no digestive enzyme, so it does not take part directly in digestion. Pancreatic juice has three enzymes: trypsin, amylase and lipase. Trypsin acts upon peptones and proteoses changing them into polypeptides and amino-acids. Amylase changes starch and glycogen into maltose and lipase changes fat emulsions to fatty acids and glycerol. The products of digestion are finally absorbed in the wall of small intestine and taken into blood.

Large Intestine: The large intestine receives undigested materials of the food from the small intestine. It absorbs water and then passes the material into the rectum.

Liver: It produces bile which is stored in the gall bladder. Bile contains water, bile salts and bile pigments and has no digestive enzymes. Bile also contains salts like bicarbonate, glycocholate and taurocholate or sodium. Sodium bicarbonate neutralises the acid and makes the chyme food called chyme, alkaline, glycocholate and taurocholate of sodium break down the fats of tissues into small globules which can mix with water to form an emulsion.

Process of digestion: In the mouth, the teeth break and chew up the food with the help of saliva coming from salivary glands, which changes starch into sugar. From the mouth the food passes into the stomach. The stomach produces gastric juice which kills bacteria present in the food, and enzymes help in the digestion of proteins and fats. Then, the food becomes chyme and passes into the duodenum where pancreatic juice from pancreas, bile from liver and intestinal juice from small intestine help in digestion, absorption and excretion. The chyme thus turns into chyle and is finally taken into blood. Undigested and unabsorbed materials pass out through the anus as faeces and urine through the bladder.

BLOOD CIRCULATION

Composition of blood: Blood is made up of fluid called plasma (60%) and a greater number of blood cells called corpuscles (40%). Plasma is 90% water with proteins and inorganic salts. Organic substances such as glucose, amino acids, fats, urea, hormones and enzymes, occur in plasma. Corpuscles are of two kinds, red and white. Red corpuscles are produced in the spleen. They form the majority of blood corpuscles. They contain the protein pigment haemoglobin which gives the red colour. It also has iron. White corpuscles are much less in number. These are of various kinds, some of which destroy disease germs which may enter the blood. Haemoglobin is a protein pigment in red blood cells. It combines readily with oxygen in lungs to form a loose compound called oxyhaemoglobin which is transported to tissues where it breaks up into haemoglobin and oxygen. The oxygen is used up by tissues for oxidation and the resultant carbon dioxide is carried away by the blood.

Blood group is the grouping of people whose blood may be mixed without clumping of blood corpuscles. A, B, AB and O are the four main blood groups. When blood of any two different groups is mixed, agglutination or clotting of blood corpuscles occurs and so only blood of the same group is used in blood transfusion.

Heart : It is a strong muscular organ situated in the chest between the right and left lungs and enclosed in a bag called the pericardium. It lies behind the breast bone and the ribs slightly to the left. It has two auricles on the upper half and two ventricles on the lower half, separated from each other by partitions. These parts have valves between them.

Blood circulation: Auricles and ventricles of the heart contract and expand alternately. The right auricle receives impure blood from a large vein and the left auricle receives pure blood from the lungs. Both kinds of blood are forced into two ventricles by the contraction of two auricles. Now the two ventricles contract, valves close the opening between auricles and ventricles (systole) and hence no blood can go back into the auricles. Thus, the pure blood from the left ventricle goes into a large aorta and the impure blood from the right ventricle goes into the pulmonary artery. The aorta takes blood to various parts of the body. The pulmonary artery takes impure blood to the lungs. When ventricles relax (diastole) the auricles are again filled with blood and the same process is repeated. The contractions of ventricles are called heart beats.

Veins : They have valves and contain blood flowing to the heart. The backward flow of blood (away from the heart) by the pulsation of heart is checked by these valves.

RESPIRATORY SYSTEM

Breathing involves intake of oxygen (inspiration) from atmospheric air and expulsion of carbon dioxide (expiration). The respiratory system is composed of nostrils, wind pipe or trachea, bronchi and bronchioles, lungs. The lungs are enclosed in a compartment formed by the ribs, the breast bone and backbone and perform the function of respiration.

ENDOCRINE SYSTEM

Endocrine is the system of ductless glands linked by nervous and circulatory system. They secrete hormones. The hormones control growth and other essential activities in the life process of the body.

Pituitary is a small gland situated beneath the brain. It secretes the important pituitrin hormone. Its over-secretion in childhood produces "giants" and in adult life "acromegaly" where growth of the parts of the body is disproportionately increased as gorilla-like appearance.

EXCRETORY SYSTEM

Excretory system eliminates harmful waste products formed in the body. The main excretory organs are lungs, kidneys, skin and large intestine. Lungs throw out carbon dioxide and water vapour. Large intestine excretes waste matter of digestion as faeces and kidneys excrete urine. Skin excretes sweat. Kidneys take away the nitrogenous end products of the metabolism, chiefly urea. The blood entering kidneys brings urea, uric acid, large quantities of water, sugar and various salts which, by filtration, are eliminated with urine. Kidneys also absorb certain useful constituents such as glucose, water and salts. Skin protects the body, regulates the temperature of the body, excretes waste matter, gives the sense of touch and stores reserve food.

NERVOUS SYSTEM

Nervous system controls and regulates the activities of all the other systems of body. It coordinates the reception of external stimuli and responds to them by sensory nerves and motor nerves. The whole system is divided into three parts: (1) the central nervous system, (2) the peripheral nervous system, and (3) the autonomic nervous system.

Central nervous system consists of brain and spinal cord safely lodged in the brain case and vertebral column. The brain controls voluntary actions, intelligence, memory, association, imagination and will. Cerebellum regulates the muscular movement of the body coordinating them. Medulla-oblongata controls involuntary actions of breathing and heartbeat. The spinal cord is an elongated cylindrical continuation of medulla and regulates various reflex actions. Peripheral nervous system consists of nerves which arise from the brain and the spinal cord. Autonomic system controls the internal activities of visceral organs, i.e., the circulation, digestion over which we have no voluntary control.

HUMAN DIET

Diet denotes the group of all edible substances essential for growth and maintenance of the body. The important components of diet are proteins, fats, carbohydrates, vitamins, salts and water. Dietary needs vary from person to person and age to age. The diseases which are caused by deficient diet are known as deficiency diseases.

Balanced diet or mixed diet provides all the essential constituents necessary for growth and maintenance of the body. It must contain all the essential constituents in adequate amount. The ratio between proteins, fats and carbohydrates should be 1:1:4. The food should be easily digestible and given according to age. Cooking of food is essential because it sterilises foodstuffs, makes them palatable and easily digestible.

CLASSIFICATION OF FOOD

1. **Carbohydrates:** Sugar, honey, starch, potatoes, rice, wheat, etc., are carbohydrates. They are compounds of carbon, hydrogen, oxygen, sugar, starch, etc. They provide about half of the required energy and thus maintain the temperature of the body. Energy is produced by the burning of sugar.

2. **Proteins:** Eggs, beans, pulses, fish, etc., are proteins. These are compounds having an excess of nitrogen with carbon, hydrogen, oxygen and sometimes sulphur and phosphorus. They are mainly responsible for growth. Eggs, meat, pulses, etc., are the richest source of proteins. Their absence causes extreme weakness.

3. **Fats and Oils:** Oils, nuts, ghee, butter, etc. They contain same components as carbohydrates and are better sources of energy which is again produced by burning. Their deficiency in the body causes several diseases while excess is stored beneath the skin.

4. **Vitamins:** Every food almost contains some vitamins. They are organic substances which are

essential for the growth of the body and are required in small amounts. Their deficiency causes sickness and stunted growth. Each of them performs definite functions as follows :

(a) Vitamin A is present in cod, halibut, shark liver oils, eggs, green vegetables, etc. It is essential for growth of the body and protects skin and other delicate parts of the body. It prevents infection and keeps the eyes healthy. Its deficiency causes night blindness and stunted growth of the body.

(b) Vitamin B₁ complex is found in yeast, green vegetables, cereals, etc. Its deficiency leads to beriberi and anaemia.

(c) Vitamin B₂ complex is the mixture of about twelve components. It is present in milk, butter, cereals, vegetables, etc. This is very important for growth and blood. The deficiency of this complex leads to subnormal growth, pellagra, etc.

(d) Vitamin C is present in large quantities in vegetables, fresh fruits, orange, etc. Human milk is also a good source of vitamin C. Its deficiency causes scurvy, anaemia, impaired growth, haemorrhage and susceptibility to infection.

(e) Vitamin D is present in cod, shark liver oil, milk, butter, etc. Its deficiency causes rickets in children and osteomalacia in adult females.

(f) Vitamin E is found in cereals, green vegetables, eggs, etc. Deficiency of this vitamin causes sterility.

(g) Vitamin K is mainly confined to green vegetables. This vitamin maintains normal clotting of blood.

(h) Vitamin P is present in association with vitamin C and its functions are closely associated with the same vitamin. It helps the action of vitamin C and keeps the blood capillary healthy.

5. Inorganic Salts: Vegetables, fruits, etc. Salts of calcium, potassium, magnesium, iron, sulphur, iodine, etc., are essential for the health of the body.

6. Water: Most of the food contains water. Water constitutes 75 per cent of our body. It helps the digestion and absorption of food. It also maintains the temperature of body and removes waste products.

DISEASES AFFECTING HUMAN BEINGS

Human beings can suffer from acquired or congenital diseases. Acquired diseases may be (1) Deficiency diseases, (2) Infectious or communicable diseases, (3) Degenerative diseases, (4) Allergies, (5) Cancers. Congenital diseases are those defects or disorders present from birth and resulting from errors in reproduction or defective body development.

1. Deficiency Diseases: Deficiency diseases are due to deficiency in the diet of a nutrient. They can generally be cured by providing the missing nutrients.

(a) Protein deficiency causes two major diseases Kwashiorkor and Marasmus.

(b) Mineral deficiency causes specific diseases :-

(i) Anaemia : Iron deficiency causes haemoglobin deficiency in blood.

(ii) Goitre : It is due to the deficiency of iodine for the synthesis of thyroxine hormone of thyroid gland.

(iii) Hypokalaemia : It is caused by deficiency of potassium.

(iv) Hyponatremia : Loss of sodium causes this state of low blood pressure and loss of body weight.

(c) Vitamin deficiency causes a variety of diseases :-

(i) Night Blindness : It is caused by the deficiency of Vitamin A.

(ii) Xerophthalmia : It is the dryness of eye and is caused by the deficiency of Vitamin A.

(iii) Dermatitis : It is caused by the deficiency of Vitamin A.

(iv) Beri-beri : It is caused by the deficiency of Vitamin B₁ (thiamine).

(v) Anobalavinsis : It is caused by the deficiency of vitamin B₂ (riboflavin).

(vi) Pellagra : It is caused by deficiency of nicotinic acid (niacin), a vitamin of the B complex.

(vii) Pernicious Anaemia : It is caused by the deficiency of Vitamin B₁₂ (cobalamin).

(viii) Scurvy : It is caused due to the deficiency of Vitamin C or ascorbic acid.

(ix) Rickets : It is a disease causing disorder of calcium and phosphorus metabolism which is associated with the deficiency of Vitamin D and beginning most often in infancy and early childhood between the ages of 6 months and 2 years.

(x) Osteomalacia : It occurs in adult due to Vitamin D deficiency.

2. Infectious or Communicable Diseases

These diseases are caused by micro-organisms such as virus, bacteria, fungi, etc.

(a) Diseases caused by Bacteria :- Cholera, Diphtheria, Typhoid, Tetanus, Typhoid, Paratyphoid, Malaria, Typhus, Pneumonia, Syphilis, etc.

(b) Diseases caused by Virus :- Chickenpox, Measles, Mumps, Influenza, Smallpox, etc.

(c) Diseases caused by Fungi are:
Ringworm, Athlete's foot, Dhobie itch.

(d) Diseases caused by Protozoans are:
Amoebiasis, Malaria, Sleeping sickness, Kala-
azar, Diarrhoea

(e) Diseases caused by Helminthes or Worms
are:

Filaria, Tapeworm and Hookworm transmission.

3. Degenerative Diseases: These diseases
occur due to malfunctioning of some organ or
organ system in the body. They are:

Heart attack, Diabetes mellitus, Arthritis.

4. Allergies: Allergy is any condition in which
a person reacts in a hypersensitive manner to
any substance. Symptoms mostly affect the skin
and mucous membrane, may be in reaction to
specific foodstuffs, drugs, fabrics, dust, pollen,
plants, animals, heat, cold.

The major types of allergy are hay fever,
asthma and eczema.

5. Cancer: Cancer is the abnormal growth of
cells, often resulting in a malignant tumour.
Symptoms include wounds that do not heal,
unusual bleeding or discharge, a lump or thickening
in the breast or elsewhere, a sore that does not
heal, hoarseness or cough, change in size or
colour of wart or mole, indigestion or difficulty in
swallowing. They are classified according to the
tissues in which they originate.

SHORT-ANSWERED QUESTIONS

**Q. Why does it not hurt when we cut our
nails?**

A. The nails are not connected either with the
blood vessels or the cartilage. On cutting the
nails, the nerve system is not affected. Therefore,
we do not feel hurt when we clip the nails.

**Q. Why should a certain amount of calcium
be a necessary content of our food?**

A. Calcium is required for the growth and
maintenance of bones and teeth. Calcium is also
needed for the activity of the heart and muscles.
Hence, a certain amount of calcium must be
included in our daily diet. It may be worthwhile to
mention here that the daily intake of calcium
should be approximately one gram. The rich
sources of calcium are milk, milk products, green
leafy vegetables, fish, marine products, cereals
like millet, ragi, etc.

**Q. How much blood does a normal person
have in his body?**

A. An adult human body contains about 4 to
5 litres of blood moving through the blood vessels
in an endless circuit.

**Q. Why does an individual's nose run when
he cries?**

A. When a person cries, some tears gather in
the eyes and there is a watery discharge from the
nose, when tears are carried from the eyes to the
nasal cavity.

Q. What are the functions of the following?

(i) Intestines; (ii) Liver; (iii) Bladder;
(iv) Heart.

A. (i) Intestines: These help in the digestion
as well as absorption of food.

(ii) Liver: It is the largest gland in the body.
Its functions are: (a) to secrete bile juice, which
helps in the digestion of food; (b) to store excess
of sugar in the form of glycogen; (c) to produce
antidote to neutralise poison; (d) to manufacture
red blood corpuscles; and (e) to help in the
production of urea.

(iii) Bladder: It is membranous body situated
in the front part of the pelvic cavity which acts
as a reservoir of urine.

(iv) Heart: The functions of the heart are:
(a) to supply pure blood to all parts of the body;
(b) to collect impure blood from the organs of the
body; and (c) to pump impure blood into lungs for
purification.

**Q. Explain briefly what is meant by the
following:**

(i) Hormones; (ii) Antibody.

A. (i) Hormones: It is a chemical substance
produced by a ductless gland. Insulin is a good
example of it. These control the growth of body
and help nervous system.

(ii) Antibody: It means a kind of substance in
the blood tending to neutralise certain other
substances which are harmful.

Q. Name the bones of the human arm.

A. Radius, Scapula, Humerus, Ulna, Carpals,
Metacarpals, Phalanges.

**Q. Give a short account of the skeleton and
muscles of human body.**

A. The Skeleton of Body: The human body is
supported on an internal skeleton consisting of
206 long, short and irregular bones. These are
joined together in several modes. The main
functions of skeleton are: (i) to stiffen the body;
(ii) to provide levers upon which muscles of the
body work; (iii) to give shape to the body; and
(iv) to protect the internal organs.

Muscular System or Muscles: The muscles of
the body are attached to the bones or the walls
of the organs and effect the movement of the
body. Muscles are thick at the centre and thin

at the ends. In the human body, there are over 300 muscles. These are of two types:

(i) **Voluntary Muscles:** These are under our control, such as muscles of hands, legs, neck, etc. They cause the external movement of the body. They are situated on the bones.

(ii) **Involuntary Muscles:** These are not under our will, such as muscles of lungs, heart, kidneys, etc. These cause the internal movement of the body. These are situated on the walls of the organs.

Q. What are the functions of lungs?

A. The main functions of lungs are: (i) to purify the blood, e.g., to separate the carbon dioxide and water vapours from blood; and (ii) to give oxygen to the blood.

Q. Describe briefly the functions of Liver.

A. The main functions of liver are: (i) to act as a store of digested sugar for use when required in the body, (ii) to help in digesting food, (iii) to separate nitrogenous waste, and (iv) to kill the poison produced in the body.

Q. Write a short note on Blood and its functions.

A. Blood is a thick fluid containing corpuscles, cells of two types—red and white. The red corpuscles in the blood are so numerous that they give red colour to the blood. Their function is to carry oxygen from lungs to tissues. The white corpuscles, which are much fewer in number, are colourless and irregular in shape. They act like the guard of the body. All sorts of germs entering the blood are killed by them. Thus, a body having large percentage of these corpuscles becomes proportionately healthier. The main functions of blood are: (i) to supply oxygen to various organs of the body; (ii) to remove waste products of the body; (iii) to supply food to various organs of the body; and (iv) to manufacture digestive juice.

Coagulation of Blood : When blood is withdrawn from the body and allowed to be still for some time, it becomes semisolid, i.e., it coagulates. After a while, the clot begins to shrink and put up a pale yellow fluid called serum.

The coagulation is due to change of soluble substance called fibrinogen.

The clotting of blood at the wound has its advantages for it plugs the opening in the blood vessels and prevents further bleeding.

Q. Write a short note on blood pressure.

A. With every contraction and relaxation of heart, there is a certain degree of pressure on the walls of the blood vessels. This is called blood pressure. It is recorded by an instrument called the Sphygmomanometer. Diseases of the kidney, internal poisoning and prolonged emotional stress cause high blood pressure.

Q. What do you know about the following :

(i) **Infectious Diseases ;** (ii) **Contagious diseases?**

A. (i) Infectious Diseases : These are caused by the introduction of germs or virus in human body, e.g., tuberculosis, cholera, smallpox and so on. These germs may be introduced by direct contact or indirectly through air and water.

(ii) Contagious Diseases: These are diseases which are caused by the actual contact with the sick.

Q. What is the difference between vaccination and inoculation?

A. Vaccination : It means introduction of dead germs of another disease in suspension called vaccine in the skin of a man. It is done generally by making a few scratches with a knife on the arm and then rubbing the vaccine with it, e.g., BCG vaccine.

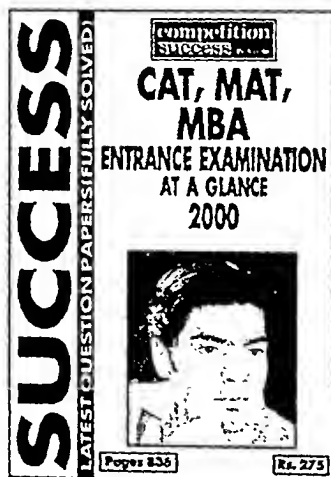
Inoculation : It means introduction of germs of the same disease below the skin, so as to produce the disease in a mild form and thus give immunity from a severe attack of the same disease, e.g., plague, cholera.

Q. Write a short note on Insulin.

A. It is a very useful drug for diabetes and was discovered by Dr. F.G. Banting in 1922. It is a product of unknown nature derived from the pancreas of animals. It regulates the percentage of sugar in blood. If the percentage is too high it converts the excess into starch and stores the starch in liver, muscles and skin. With the help of insulin a diabetic patient leads a normal healthy life. It is generally injected into the patient. □

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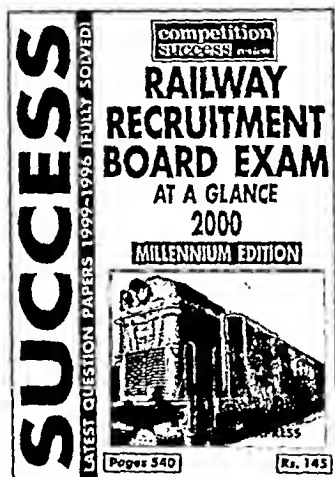
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 Decameron: Giovanni Boccaccio
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 Earth in the Balance—Forging a New Common Purpose: Al Gore
 Earth Mother, The: Pupul Jayakar
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 Ghosts in the Machine: Arthur Koestler
 Girl in Blue: P.G. Wodehouse
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 the People: Promilla Kalhan
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100 Best Parliamentary Speeches—1947-97:

Dr. Subhash C. Kashyap
 Hamlet: William Shakespeare
 Hamsters: C. P. Snow
 Handful of Dust, A: Evelyn Waugh
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 Harvest: Manjula Padmanabhan
 Havana Bay: Martin Cruz Smith
 Headlong: Michael Frayn
 Heart of Darkness: Joseph Conrad
 Heat and Dust: Ruth Praver Jhabwala
 Heaven Has No Favourites: Eric Maria Remarque
 Heavy Weather: P. G. Wodehouse
 Heir Apparent: Dr. Karan Singh
 Henderson the Rain King: Saul Bellow

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I am not an Island: K. A. Abbas
 I Dare: Parmesh Dangwal
 I Follow the Mahatma: K.M. Munshi
 I Muse; Therefore I Am: V.N. Narayanan
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 Idols: Sunil Gavaskar
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 In the Bluest Eye: Toni Morrison

In the City by the Sea: Kamilla Shamsie
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 Rich Like Us: Nayantra Sehgal
 Riding the Nuclear Tiger: N. Ram
 Riding the Storm: Harold MacMillan
 Rights of Man: Thomas Paine
 Rise and Fall of the Great Powers: Paul Kennedy
 Ritu Ka Pehla Phool: Vijendra
 Ritu Samhara: Kalidas
 Rivals, The: R. B. Sheridan
 River Sutra, A: Gita Mehta
 Road to Folly: Leslie Ford
 Road to Freedom: K.K. Khullar
 Robe, The: Lloyd C. Douglas
 Robinson Crusoe: Daniel Defoe
 Romeo and Juliet: William Shakespeare
 Room at the Top: John Braine
 Rubaiyat: Omar Khayyam
 Rubaiyat-i-Omar Khayyam: Edward Fitzgerald
 Rukh Te Rishi: Harbhajan Singh

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Sacked or Sunk ? Admiral Vishnu Bhagwat : Brigadier R.P. Singh & Comdre Ranjit B. Rao
 Sadar-i-Riyasat: Karan Singh
 Sardar Patel and Indian Muslims: Rafiq Zakaria
 Saket: Maithili Sharan Gupta
 Sakharum Binder: Vijay Tendulkar
 Samler's Planet: Saul Bellow
 Sanctuary: William Faulkner
 Sands of Time: Sidney Sheldon
 Santa Evita: Tomas Eloy Martinez
 Satanic Verses: Salman Rushdie
 Satyarth Prakash: Swami Dayanand
 Savitri: Aurobindo Ghosh
 Scam, The — Who Won, Who Lost, Who Got Away: Debashis Basu and Suchi
 Scarlet Letter, The: Nathaniel Hawthorne
 Scarlet Pimpernel, The: Baroness
 Scenes from a Writer's Life: Rusk
 Sceptred Flute: Sarojini Naidu

Schindler's List: Thomas Keneally
Scholar Extraordinary: Nirad C. Chaudhuri
School for Scandal, The: R.B. Sheridan
Scope of Happiness, The: Vijayalakshmi Pandit
Scorpio Illusion, The: Robert Ludlum
Search for Home, A: Sasthi Brata
Second World War, The: Winston Churchill
Secret Agent: Joseph Conrad
Sense and Sensibility: Jane Austen
Sense of Time, A: S.H. Vatsyayan
Sesame and Lilies: John Ruskin
Seshan—An Intimate Story: K. Govindan Kutty
Seven Lamps of Architecture: John Ruskin
Seven Summers: Mulk Raj Anand
Sex, Art and American Culture: Camille Paglia
Shadow from Ladakh: Bhabaní Bhattacharya
Shadow Line: Joseph Conrad
Shahnama: Firdausi
Shakuntala: Kalidas
Shalimar: Manohar Malgonkar
Shall We Tell the President?: Jeffrey Archer
Shame: Salman Rushdie
Shape of Things to Come: H.G. Wells
She Stoops to Conquer: Oliver Goldsmith
Sher-e-Shor Angez: Shamsur Rahman Faruqi
Ship of Fools: Katherine Anne Porter
Shivaji, The Great Patriot: Lala Lajpat Rai
Shoes of the Fisherman, The: Morris West
Siddharta: Hermann Hess
Silas Marner: George Eliot
Sister of My Heart: Chitra Banerjee Divakumi
Six Characters in Search of an Author : Luigi Pirandello
Slaughter House Five: Kurt Vonnegut
Slave, The: Isaac Bashevis Singer
Small Land: Leonid Brezhnev
Snakes & Ladders: A view of modern India: Gita Mehta
Snow Country: Yasunari Kawabata
Socialite Evenings: Shobha De
Sohrab and Rustam: Matthew Arnold
Sole Survivor: Derek Hansen
Song of India, The: Sarojini Naidu
Song of Solomon: Toni Morrison
Sonnets, The: William Shakespeare
Sons and Lovers: D.H. Lawrence
Sound and the Fury, The: William Faulkner
South-East Asia on a Shoestring: Hugh Finlay
South from the Limpopo: Travels Through South Africa: Dervla Murphy
Soz-i-Watan: Munshi Prem Chand
Spaniard in the Works, A: John Lennon
Special Tests: The Memoirs of an Unwanted Witness—A Soviet Spymaster: Pavel Anatolevich Sudoplatov
Spirit of the Age: William Hazlitt
Spy Catcher: Peter Wright
Stalin: Edvard Radzinsky

Starry Nights: Shobha De
Stars of New Curfew: Ben Okri
St. Joan: George Bernard Shaw
Stopping By Woods: Robert Frost
Story of My Experiments with Truth, The: Mahatma Gandhi
Story of My Life: Moshe Dayan
Story of Real Man: Nikolayev Polevoi
Story of Civilisation, The: Will Durant
Story of Philosophy, The: Will Durant
Strange and Sublime Address, The: Am Chaudhuri
Strangers and Brothers Omnibus: C.P. Snow
Strife: John Galsworthy
Stripped Steel: N.K. Singh
Struggle and the Triumph, The: Lech Walesa
Struggles of Indian Federalism: Bonica Aleaz
Struggle in My Life, The: Nelson Mandela
Study of History, A: Arnold Toynbee
Studies in the Psychology of Sex: Havelock Ellis
Sula: Toni Morrison
Sultry Days: Shobha De
Summer Sisters: Judy Bloom
Sun Stone: Oclavio Paz
Sunny Days: Sunil Gavaskar
Surrender at Dacca: Lt. Gen. J.F.R. Jacob
Surviving Men: Shobha De
Swami and Friends: R.K. Narayan
Swapnavasavadatta: Bhasa
Sword and the Sickle, The : Mulk Raj Anand

T

Tale of a Tub, A: Jonathan Swift
Tale of Two Cities, A: Charles Dickens
Tales from Shakespeare: Charles Lamb
Tales of Sherlock Holmes: Sir Arthur Conan Doyle
Talisman: Sir Walter Scott
Tamas: Bhisham Sahni
Tar Baby: Toni Morrison
Tarkash: Javed Akhtar
Tarzan of the Apes: Edgar Rice Burroughs
Tears of Renewal: Henry Kissinger
Tehrik-e-Mujahideen: Dr. Sadiq Hussain
Tempest, The: William Shakespeare
Temple Tiger: Jim Corbett
Tess of D'Urbervilles: Thomas Hardy
Thank You, Jeeves: P.G. Wodehouse
3001: The Final Odyssey: Arthur C. Clarke
The Book of Shadows: Namita Gokhale
The Age of Extremes : Eric Hobsbawm
The Agenda—Inside the Clinton White House: Bob Woodward
The Asian Elephant—A Natural History: J.C. Daniel
The Assassination: K. Mohandas
The Beach Tree: Pearl S. Buck
The Betrayal of East Pakistan: Lt. General A.A.K. Niazi

The Black Pharaoh: Christian Jacq
 The Blackwater Lightship: Colm Toibin
 The Blessing: Jude Deveraux
 The Book of Shadows: Namita Gokhale
 The British Conquest and Dominion of India: Penderel Moon
 The Calcutta Chromosome: Amlav Ghosh
 The Career & Legend of Vasco de Gama: Sanjay Subramanyam
 The Changing Global Order : World Leaders Reflect: Nathan Gardels
 The Commitments: Roddy Doyle
 The Company of Women: Khushwant Singh
 The Corrupt Society: Chandan Mitra
 The Dark Side of Camelot: Seymore Hersh
 The Diplomatic Bag: John Ure
 The Divine Discovery: V.N. Narayanan
 The Economic Policy, Preparing the 21st Century: Bimal Jalan
 The Empowerment of Women in Islam: Zeenat Shaukat Ali
 The Essence of the Thing: Madeline St. Joan
 The Future of War: George & Meredith
 The Garden of Life: Naveen Patnaik
 The Ghost Road: Pat Barker
 The Gift of Time: Jonathan Schell
 The Globalisation of Poverty: M. Doveski
 The God of Small Things: Arundhati Roy
 The Graphs of Wrath: John Steinbeck
 The Ground Beneath Her Feet: Salman Rushdie
 The Gurkhas—The Inside Story of the World's Most Feared Soldiers: John Parker
 The Hearts Had Their Reasons: Dr. Alaka Nanda Dash
 The Idea of India: Sunil Khilnani
 The India Handbook : Prospects up to 21st Century: Fitzroy Dearborn
 The India Hand book — Regional Hand Books of Economic Development: Fitzroy Dearborn
 The Indian Kaleidoscope: Joginder Singh
 The Knights of Falsehood: K.P.S. Gill
 The Lord of the Rings: J.R.R. Tolkien
 The Lost World: Michel Cristan
 The Madwoman of Jogora: Suhaila Abdullah
 The Making of a Cricketer: Ajit Wadokar
 The Making of a Nation : India's Road to Independence: B.R. Nanda
 The Map of Love: Ahdaf Soueif
 The Moor's Last Sigh: Salman Rushdie
 The Mosque and Rama's Kingdom: Ved Mehta
 The Muslims of British India: Dr. Peter Hardy
 The Next World War: James Adams
 The Other Side of Licence: Urvashi Butalia
 The Prince of Wales—A Biography: Jonathan Dimbleby
 The Politics of Backwardness: V.A. Pal Panandikar
 The Ranch: Daniel Steel

The Seagull: Anton Chekhov
 The Sepoy and the Raj—Indian Army: David Omissi
 The Servant's Shirt: Vinod Kumar Shukla
 The Sikh Unrest and the Indian State: Ram Narayan Kumar
 The Sikhs: Patwant Singh
 The Silent Cry: Kenzaburo Oe
 The Simple Truth: David Baldacci
 The Street Lawyer: John Grisham
 The Surgeon's Daughter: Campbell Armstrong
 The Testament: John Grisham
 The Thirst for Freedom: C.S. Chellappa
 The Underground Man: Mic Jackson
 The Unfinished Agenda: Devender Singh
 The Van: Roddy Doyle
 The Victim: Saul Bellow
 The Way of All Flesh: Samuel Butler
 The Wedding: Anton Chekhov
 The Whites Flower: Brenda Graham
 The World Bank & Poverty of Nations: Cathorino Caulfield
 Thieves in the Night: Arthur Koestler
 Thirteenth Sun: Amrita Prilam
 Thorn Birds: Colleen McCullough
 Thousand Cranes: Yasunari Kawabata
 Thousand Days, A: Arthur M. Schlesinger
 Three Horsemen of the New Apocalypse: Nirad C. Chaudhuri
 Three Musketeers: Alexandre Dumas
 Three Sisters: Anton Chekhov
 Through the Indian Looking Glass: Selbomo
 Through the Looking Glass: Lewis Carroll
 Thus Spake Zarathustra: Friedrich Nietzsche
 Tibet on March: Charan Shandilya
 Tiger: A Story of Indian Tiger: Kallish
 Time Machine: H.G. Wells
 Time to be Happy: Nayantra Sehgal
 Tin Drum: Gunther Grass
 Tinker, Teller, Soldier: John Le Carré
 To Kill a Mocking Bird: Harper Lee
 To Jerusalem and Back: Saul Bellow
 To Live or Not to Live: Nirad C. Chaudhuri
 Tolstoy and Gandhi in Their Historical Setting
 The Origins of Non-violence: Martin Groom
 Tom Jones: Henry Fielding
 Top Brass: H. S. Sোধी
 Towering Justice: C.B. Srinivasan
 Traveller, The: Oliver Goldsmith
 Treasure Island, The: Robert Louis Stevenson
 Tree of Men, The: Patrick White
 Trial, The: Franz Kafka
 Trinity: Leon Uris
 Triumph: John Kenneth Galbraith
 Tropic of Cancer: Henry Miller
 Truth : A History and A Guidance for the Perplexed: Felipe Fernandez Armenta

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 Tryst with Terror — Punjab's Turbulent Decade:
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 Uplifted Soil, The: Mikhail Sholokhov
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 Uttar Ramcharita: Bhava Bhuti

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V's Foreign Policy — Darling the
 Prof. M.L. Sondhi & Prakash Nanda
 Dolls: Jacqueline Susann
 William Thackeray

Vain Cook

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 Virgilians, The: William Thackeray
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 Zhivago, Dr.: Boris Pasternak
 Zulfikar, My Friend: Pilo Mody
 Zulfikar Ali Bhutto & Pakistan: Rafi Raza.

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Austen, Jane : Emma; Mansfield Park; Northanger Abbey; Persuasion; Pride and Prejudice; Sense and Sensibility.

Balzac, Honore de : Black Sheep; Lost Illusion; Murky Business; Old Goriot; Wild Ass's Skin; Eugenie Grandet; Harlot High and Low.

Barrie, Sir J.M. : Admirable Crichton; Dear Brutus; Peter Pan; Old Lady Shows Her Medals; Twelve Pound Look; What Every Woman Knows; Quality Street.

Bellow, Saul : Dangling Man; Henderson the Rain King; Humboldt's Gift; Last Analysis; The Victim; To Jerusalem and Back.

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Bronte, Charlotte : Jane Eyre; Shirley; Vilette; The Professor.

Bronte, Emily : Wuthering Heights; Peculiar Music.

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Chaucer, Geoffrey : Canterbury Tales; Franklin's Tale; King's Tale; Nun's Priest's Tale; Pardoner's Tale; Prologue to Canterbury Tales.

Chekhov, Anton : The Seagull; Three Sisters; The Wedding; Cherry Orchard; Ivanov; Lady with the Lapdog.

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Doyle, Arthur Conan : The Adventures of Sherlock Holmes; Poison Belt; Tales of Sherlock Holmes.

Drabble, Margaret : Garrick Year; Jerusalem the Golden; Millstone; Needle's Eye; Summer Bird Cage; Waterfall.

Dryden, John : Absalom and Achitophel; All for Love; Aurengzeb.

Dumas, Alexander : Black Tulip; Count of Monte Cristo; Forty Five; Man in the Iron Mask; Money Question; Three Musketeers.

Ellot, George : Adam Bede; Daniel Deronda; Middlemarch; Mill on the Floss; Romola; Scenes of Clerical Life; Silas Marner.

Ellot, T.S. : Cocktail Party; Confidential Clerk; Family Reunion; Four Quartets; Murder in the Cathedral; Sacred Wood; The Wasteland.

Faulkner, William : Absalom, Absalom; As I Lay Dying; Big Woods; Flags in the Dust; Go Down Moses; Intruder in the Dust; Knight's Gambit; Light in August; Mansion; Requiem for a Nun; Sanctuary; Sartoris; Sound and the Fury; Town; Wild Palms; Wishing Tree.

Fielding, Henry : Amelia; Author's Farce; Grub-Street; Jonathan Wild; Joseph Andrew; Tom Jones; The True Patriot.

Fischer, Louis : Gandhi, Great Challenge; Life of Lenin; Life of Mahatma Gandhi, Men and Politics; Road to Yalta; Soviet Journey; This is Our World.

Forster, E.M. : Aspects of the Novel; Longest Journey; Maurice; A Passage to India; Room with View; Two Cheers for Democracy.

Gatbraith, John K. : Affluent Society; Ambassador's Journal; American Capitalism; A China Passage; Liberal Hour; Economics of Public Purpose; Economics of Peace and Laughter; New Industrial State; Scotch; Triumph.

Galsworthy, John : Forsyte Saga; Strife; Justice; Escape; Loyalties; Man and Property; Beyond; Caravan; Dark and Flower; End of the Chapter; Fraternity.

Gibbon, Edward : Decline and Fall of the Roman Empire; History of Christianity.

Goethe, J.W. Von : Egmont; Kindred by Choice; Sorrows of Young Werther; Ironhand; Faust.

Goldsmith, Oliver : Citizen of the World; She Stoops to Conquer; The Vicar of Wakefield; Traveller; Deserted Village.

Gorky, Maxim : Childhood; Children of the Sun; City of the Yellow Devil; Enemies; Life of a Useless Man; The Mother; Lower Depths.

Gunther, John : Alexander the Great; Death, Be Not Proud; Inside Europe Today; Inside Asia

Today; Inside South America; Inside Australia; Meet Soviet Russia; Twelve Cities.

Hardy, Thomas : Dynasts; Far from the Madding Crowd; Jude the Obscure; Under the Greenwood Tree; Tess of D'Urbervilles; The Mayor of Casterbridge; A Pair of Blue Eyes; The Return of the Native.

Hemingway, Ernest : A Farewell to Arms; For Whom the Bell Tolls; The Sun Also Rises; The Old Man and the Sea; Death in the Afternoon; Fiesta; Fifth Column; Islands in the Stream; Men Without Women; The Snows of Kilimanjaro.

Homer : Iliad; Odyssey.

Hugo, Victor : Hunchback of Notre Dame; Les Miserables.

Huxley, Aldous : Along the Road; Ape and Essence; Ends and Means; Antic Hay, Mod Classics; Grey Eminence; Travel Book; Brave New World; Elysium in Gaza; Point Counter Point; Time Must Have a Stop.

James, Henry : The Mysterious Universe; The Universe Around Us.

Joyce, James : Portrait of the Artist as a Young Man; Ulysses.

Kipling, Rudyard : Jungle Book; Kim; The Light That Failed.

Koestler, Arthur : Arrival and Departure; Arrow in the Blue; Call Girls; Darkness at Noon; Dialogue with Death; Ghosts in the Machine; Gladiators; Heel of Achilles; Sleepwalkers; Roots of Conscience; Thieves at Night; Watershed.

Lamb, Charles : Essays of Elia; Tales from Shakespeare.

Laski, H.J. : Grammar of Politics; Liberty in the Modern State; The Dilemma of Our Times.

Lawrence, D.H. : Sons and Lovers; Women in Love; The Rainbow; Lady Chatterley's Lover; Kangaroo.

Machiavelli, Niccolo : On the Art of War; The Prince.

Marlowe, Christopher : Dr. Faustus; Edward II; Tamburlaine, The Massacre of Paris.

Maugham, Somerset : Of Human Bondage; The Razor's Edge; The Moon and Six Pence; The Painted Veil.

Mayo, Katherine : Mother India.

Milton, John : L'Allegro; Camus; Lycidas; Paradise Lost; Paradise Regained.

Mitchell, Margaret : Gone with the Wind.

Moliere : Le Misanthrope; Tartuffe; The Miser.

More, Thomas : Utopia; Richard III

Naipaul, V.S. : Area of Darkness; India — A Wounded Civilisation; A House for Mr. Biswas; Middle Passage; Flag on the Island.

Orwell, George : Nineteen Eighty-Four; Animal Farm; Burmese Days; Decline of the English Murder.

Pasternak, Boris : Doctor Zhivago; Last Summer; Blind Beauty.

Plato : The Republic.

Remarque, Eric Maria : All Quiet on the Western Front; Full Circle; Heaven Has no Favorites; Night in Lisbon; Shadows in Paradise; Three Comrades; Time to Love and Time to Die.

Rolland, Romain : Mahatma Gandhi; Ramakrishna; Jean Christopher.

Rousseau : Confessions; The Social Contract.

Ruskin, John : Unto This Last; Seven Lamps of Architecture; Modern Painters.

Russell, Bertrand : Justice in Wartime; New Hopes for a Changing World; Principles of Social Reconstruction; Unarmed Victory; Conquest of Happiness; History of Western Philosophy; Human Knowledge; Education and the Social Order; Free Man's Worship; Has a Man Future? Impact of Science on Society; In Praise of Idleness and Other Essays.

Sartre, Jean Paul : Age of Reason; Intimacy; Iron in the Soul; Reprieve; Being and Nothingness.

Schumacher, E.F. : Age of Plenty; People's Power; Small is Beautiful.

Scott, Walter : Abbot; Ivanhoe; Kenilworth; Red Gauntlet; Talisman; The Lady of the Lake; The Pirate; Monastery; Old Mortality; Woodstock.

Shakespeare, William : As You Like It; Antony and Cleopatra; Julius Caesar; Hamlet; Othello; Romeo and Juliet; King Lear; The Merchant of Venice; Macbeth; The Comedy of Errors; The Tempest; Twelfth Night; Much Ado About Nothing; A Midsummer Night's Dream; The Merry Wives of Windsor; Henry V.

Shaw, George Bernard : Apple Cart; Arms and the Man; Candida; The Doctor's Dilemma; Major Barbara; Saint Joan; Pygmalion; Man and Superman; Androcles and the Lion; The Devil's Disciple; Back to Methuselah; Too True to be Good; The Man of Destiny; Caesar and Cleopatra.

Sheridan, R.B. : The Rivals; The School for Scandal; The Critic.

Singer, Isaac Bashevis : Enemies; The Estate; Family Moskat; The Manor; Passions; Short Friday; The Slave.

Snow, C.P. : The Affairs; Corridors of Power; Death Under Sail; Conscience of the Rich; Hamsters; Homecomings; Last Things; The Masters, In Their Wisdom; New Men; The Search; Strangers and Brothers Omnibus; Two Cultures; Variety of Men.

Snow, Edgar : Far East Front; Living China; Red Star Over China; The Battle for Asia; People

on Our Side; Journey to the Beginning; Red China Today.

Solzhenitsyn, Alexander : August 1914; Cancer Ward; Candle in the Wind; First Circle; Gutag Archipelago; Lenin in Zurich; Lover Girl and the Innocent; One World of Truth; Warning of the Western World; From Under the Rubble.

Spenser, Edmund : The Faerie Queene.

Stevenson, Robert Louis : Kidnapped; An Apology for Idlers; Doctor Jekyll and Mr. Hyde; The Black Arrow; The Treasure Island.

Stone, Irving : Adversary In the House; Agony and the Ecstasy; Immortal Wife; Love is Eternal; Lust for Life; The Passionate Journey; President's Lady; They Also Ran; Those Who Love.

Swift, Jonathan : Gulliver's Travels; A Tale of a Tub.

Tennyson, A. : The Lotus Eaters; Idylls of a King; In Memoriam; The Charge of the Light Brigade.

Thackeray, W.M. : Vanity Fair; The Virginians; Henry Esmond; The Newcomers.

Tolstoy, Count Leo : War and Peace; Anna Karenina; Resurrection.

Twain, Mark : Adventures of Huckleberry Finn; Tom Sawyer; Birds and Beasts; Innocents Abroad; Jumping Frog; Mysterious Stranger; Roughing It; War Prayers.

Wallace, Lewis : Ben Hur.

Wells, H.G. : The Shape of Things to Come; The Invisible Man; The Time Machine; Kipps; Outline of the World History.

Wilde, Oscar : Importance of Being Earnest; An Ideal Husband; De Profundis; A Woman of No Importance.

Wodehouse, P.G. : Adventures of Sally; Bachelors Anonymous; Big Money; Bill the Conqueror; Cocktail Time; Code of the Woosters; Damset in Distress; French Leave; Frozen Assets; Full Moon; Girl in Blue; Gold Bat; Girl on the Boat; Heavy Weather; Hot Water; If I Were You; Inimitable Jeeves; Jill the Reckless; Laughing Gas; Little Nugget; Mating Season; Money for Nothing; Nothing Serious; Old Reliable; Pigs Have Wings; Quick Service; Service with a Smile; Summer Lightning.

Woolf, Virginia : The Light House; Jacob's Room; A Haunted House; Mrs. Dalloway.

Wordsworth, William : The Prelude; Solitary Reaper; Tintern Abbey.

Zola, Emile : Therese Raquin; Nana; The Debacle; Germinal; Beast in Man; Drunkard; Earth; The Kill; His Excellency; Love Affair; The Masterpiece; Priest In the House; Savage Paris; Zest for Life.

Doyle, Arthur Conan : The Adventures of Sherlock Holmes; Polson Belt; Tales of Sherlock Holmes.

Drabble, Margret : Garrick Year; Jerusalem the Golden; Millstone; Needle's Eye; Summer Bird Cage; Waterfall.

Dryden, John : Absalom and Achitophel; All for Love; Aurengzeb.

Dumas, Alexander : Black Tulip; Count of Monte Cristo; Forty Five; Man in the Iron Mask; Money Question; Three Musketeers.

Eliot, George : Adam Bede; Daniel Deronda; Middlemarch; Mill on the Floss; Romola; Scenes of Clerical Life; Silas Marner.

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3. Authors and Languages

A. Dante: <i>Latin</i>	Kumaran Asan: <i>Malayalam</i>
Abul Fazi: <i>Persian</i>	Lakshmi Narasimhan: <i>Telugu</i>
Adolf Hitler: <i>German</i>	Madhavkandali: <i>Assamese</i>
Akilan: <i>Tamil</i>	Mahadevi Varma: <i>Hindi</i>
Altaf Hussain Hali: <i>Urdu</i>	Maltilisharan Gupta: <i>Hindi</i>
Amrita Pritam: <i>Punjabi</i>	Malik Mohammed Jayasi: <i>Hindi</i>
Ashapurna Devi: <i>Bengali</i>	Maxim Gorky: <i>Russian</i>
Balwant Gargi: <i>Punjabi</i>	Michael Madhusudan Datt: <i>Bengali</i>
Banabhatta: <i>Sanskrit</i>	Miguel de Cervantes: <i>Spanish</i>
Bankim Chandra Chatterjee: <i>Bengali</i>	Mirabai: <i>Gujarati</i>
Bhai Vir Singh: <i>Punjabi</i>	Mirza Ghalib: <i>Urdu</i>
Bhartrihari: <i>Sanskrit</i>	Mohammad Iqbal: <i>Urdu</i>
Bhavabhuti: <i>Sanskrit</i>	Mulk Raj Anand: <i>English</i>
Bibhuti Bhushan Bandyopadhyaya: <i>Bengali</i>	Munshi Prem Chand: <i>Hindi</i>
Bihari: <i>Hindi</i>	Muhammad Basheer: <i>Malayalam</i>
Birendra Kumar Bhattacharya: <i>Assamese</i>	Nanak Singh: <i>Punjabi</i>
Bishnu Dey: <i>Bengali</i>	Narmada Sagar: <i>Gujarati</i>
B.M. Karanth: <i>Kannada</i>	Narsinh Mehta: <i>Gujarati</i>
Charles Darwin: <i>English</i>	O. Chandu Menon: <i>Malayalam</i>
Charles Dickens: <i>English</i>	O. Spengler: <i>German</i>
C.V. Raman Pillai: <i>Malayalam</i>	Pampan: <i>Kannada</i>
Dattatreya R. Bendre: <i>Kannada</i>	Pearl Buck: <i>English</i>
Dhan Ram Chatrik: <i>Punjabi</i>	Premendra Mitra: <i>Bengali</i>
Dostoevsky: <i>Russian</i>	Purandara Das: <i>Kannada</i>
Emily Bronte: <i>English</i>	R.C. Dutt: <i>Bengali</i>
Firdausi: <i>Persian</i>	Rabindranath Tagore: <i>Bengali</i>
G. Mazzini: <i>Italian</i>	Radhanath Roy: <i>Oriya</i>
G. Sankara Kurup: <i>Malayalam</i>	Raghupati Sahai 'Firaq' Gorakhpuri: <i>Urdu</i>
Ghulam Rabbani: <i>Urdu</i>	Ramalingam: <i>Tamil</i>
Giorgos Sefaris: <i>Greek</i>	Ramchandra Bendre: <i>Kannada</i>
Gopabandhu Das: <i>Oriya</i>	Ramdhar Singh 'Dinkar': <i>Hindi</i>
Gopinath Mohanty: <i>Oriya</i>	Ranna: <i>Kannada</i>
Goverdhan Ram: <i>Gujarati</i>	Rousseau: <i>French</i>
Hali: <i>Urdu</i>	S.H. Vatsyayan: <i>Hindi</i>
Hari Narayan Apte: <i>Marathi</i>	S.K. Pottekkatt: <i>Malayalam</i>
Harish Chandra: <i>Hindi</i>	Saghar Nizami: <i>Urdu</i>
Hem Chandra Barua: <i>Assamese</i>	Sarat Chandra Chatterji: <i>Bengali</i>
Homer: <i>Greek</i>	Shiv Batalvi: <i>Punjabi</i>
J.W. Von Goethe: <i>German</i>	Subramania Bharati: <i>Tamil</i>
Jalnendra Kumar Jain: <i>Hindi</i>	Sudarshan: <i>Hindi</i>
Jai Shankar Prasad: <i>Hindi</i>	Sumitranandan Pant: <i>Hindi</i>
Jean Paul Sartre: <i>French</i>	Surdas: <i>Hindi</i>
Jim Corbett: <i>English</i>	Tarashankar Bandopadhyaya: <i>Bengali</i>
Josh Malihabadi: <i>Urdu</i>	Thakazhi Sivasankara Pillai: <i>Malayalam</i>
K.M. Munshi: <i>Gujarati</i>	Tikaram Mahay: <i>Marathi</i>
K.S. Karanth: <i>Kannada</i>	Tirputi: <i>Telugu</i>
K.V. Puttappa: <i>Kannada</i>	Tukaram: <i>Marathi</i>
Kabir: <i>Hindi</i>	Tutsidas: <i>Hindi</i>
Kalhana: <i>Sanskrit</i>	Uma Shankar Joshi: <i>Gujarati</i>
Kalidas: <i>Sanskrit</i>	Upendra Nath Ashq: <i>Urdu</i>
Kazi Nazrul Islam: <i>Bengali</i>	V.S. Khandekar: <i>Marathi</i>

4. Major Indian Languages and Important Authors

Assamese : Birendra Kumar Bhattacharya; Hem Chandra Barua; Hem Chandra Goswami; Madhavkandali.

Bengali : Ashapooma Devi; Bankim Chandra Chatterjee; Bibhuti Bhushan Bandopadhyaya; Bishnu Dey; Premendra Mitra; Rabindranath Tagore; R.C. Dutt; Michael Madhusudan Datt; Kazi Nazrul Islam; Tarashankar Bandopadhyaya.

English : Kamla Das; Manohar Malgonkar; R.K. Narayan; Raja Rao; Mulk Raj Anand; Bhabani Bhattacharya; Sasthi Bhatia; Arun Joshi; Chaman Nahai; K.A. Abbas; Anita Desai; R. Praver Jhabwala; Kamla Markandeya; Khushwant Singh; Manoj Das.

Gujarati : K.M. Munshi; Mirabai; Narmada Sagar; Narsing Mehta; Govardhan Ram; Uma Shankar Joshi.

Hindi : Tulsidas; Surdas; Bihari; Kabir; Sumitranandan Pant; Jal Shankar Prasad; Mulkisharan Gupta; Gurudatt; Munshi Prem Chand; Upendra Nath Ashk; Suryakant Tripathi 'Nirala'; Acharya Chaturseen; Mohan Rakesh; Harivansh Rai Bachchan; Mahadevi Verma; Bhagwati Charan Verma; Ramdhari Singh 'Dinkar'.

Kannada : K.V. Puttappa; B.M. Karanth; Pampan; Ranna; Ramchandra Bendre; K.S. Karanth; Purandar Das.

Malayalam : C.V. Raman Pillai; S.K. Pottakkatt; G. Sankara Kurup; Thikkazhi Sivasankara Pillai; O. Chandu Menon; Vallathol; Kumaran Asan.

Marathi : Har Narayan Apte; P.L. Doshpande; Tikaram Mahay; Viljay Tendulkar; Tukaram; V.S. Khandekar.

Oriya : Gopalbandhu Das; Gopi Nath Mohanty; Radha Nath Roy.

Punjabi : Bhai Vitor Singh; Dhani Ram Chahrik; Amrita Prillam; Nanak Singh; Balwant Gargi; Watts Shah; Bulle Shah; Sheikh Farid.

Sanskrit : Maharishi Valmiki, Maharishi Ved Vyas; Harsha; Ashvaghosh; Shudrak; Bharata; Bharvi; Jaldev; Bhartrihari; Kalidasa; Dandi; Banabhatta; Bhavabhuti.

Tamil : P.V. Aklani; Subramania Bharati; Ramalingam.

Telugu : Lakshmi Narasimhan; Tripuli; V. Satyanarayana.

Urdu : Asadullah Khan 'Ghalib'; Mohammed Iqbal; Mir Taqi Mir; Raghupati Sahai 'Firaq'; Gorakhpuri; Kanwar Mohinder Singh Bedi; Faiz Ahmed 'Faiz'; Krishan Chander; Rafiqer Singh Bedi; Upendra Nath Ashk; Qurtulain Haider.

5. Famous Characters and Their Creators

Adam: Milton
Alice: Lewis Carroll
Anna Karenina: Leo Tolstoy
Antonio: William Shakespeare
Ariel: William Shakespeare
Bassanio: William Shakespeare
Beatrice: William Shakespeare
Bertr Wooster: P.G. Wodehouse
Brutus: William Shakespeare
Christian: John Bunyan
Clare: Thomas Hardy
Claudius: William Shakespeare
Cleopatra: William Shakespeare

Coriolanus: William Shakespeare
David Copperfield: Charles Dickens
Defenceless: William Shakespeare
Don Juan: Lord Byron
Don Quixote: Cervantes
Drusyan: Valdez
Eliza Doolittle: George Bernard Shaw
Estelle: Charles Dickens
Faust: J.M. Von Goethe
Gora: Rabindranath Tagore
Hamlet: William Shakespeare
Hawkins: P.L. Senapati
Hector: Homer

Hercule Poirot: Agatha Christie
 Hyde: R.L. Stevenson
 Iago: William Shakespeare
 Ivanhoe: Sir Walter Scott
 James Bond: Ian Fleming
 Jacques: William Shakespeare
 Jean Valjean: Victor Hugo
 Jeeves: P.G. Wodehouse
 Juliet: William Shakespeare
 Kim: Rudyard Kipling
 King Arthur: Tennyson
 Long John Silver: R.L. Stevenson
 Macbeth: William Shakespeare
 Mellors: D.H. Lawrence
 Mephistopheles: J.W. Von Goethe
 Micawber: Charles Dickens
 Miranda: William Shakespeare

Oliver Twist: Charles Dickens
 Peggotty: Charles Dickens
 Perry Mason: Erle Stanley Gardner
 Pickwick: Charles Dickens
 Pip: Charles Dickens
 Portia: William Shakespeare
 Priyangbada: Kalidas
 Sam Weller: Charles Dickens
 Sancho Panza: Cervantes Saavedra
 Shakuntala: Kalidas
 Sherlock Holmes: Arthur Conan Doyle
 Shylock: William Shakespeare
 Surpanakha: Valmiki
 Tess: Thomas Hardy
 Watson: Arthur Conan Doyle
 Zhivago: Boris Pasternak

6. Popular Quotations

Be proud that you are an Indian, proudly claim
 I am an Indian, every Indian is my brother.
Vivekananda

The greatest remedy for anger is delay.
L.A. Seneca

If everybody minded their own business the
 world would go round a great deal faster than it
 does.
Lewis Carroll

The individual must die so that India may live.
 Oh, I must die so that India may win freedom
 and glory.
Jatin Das

It is an unfortunate fact that we can secure
 peace only by preparing for war.
John F. Kennedy

God, as some cynic has said, is always on the
 side which has the best football coach.
Heywood Brown

Take care to get what you like, or you will be
 forced to like what you get.
George Bernard Shaw

There is no future in any job; the future lies
 in the man who holds the job.
G.W. Crane

A failure establishes only this, that our
 determination to succeed was not strong
 enough.
Bovee

If all our misfortunes were laid in one common
 heap, whence every one must take an equal
 portion, most people would be content to take
 their own and depart.
Socrates

Those are not the best students who are most
 dependent on books. What can be got out of
 them is at best only material; a man must build
 his house for himself.
G. Macdonald

Superstition is the religion of feeble minds.
Edmund Burke

The way to wealth is as plain as the way to
 market. It depends chiefly on two words, industry
 and frugality; that is, waste neither time nor
 money; but make the best use of both. Without
 industry and frugality, nothing will do, and with
 them everything.
Franklin

Education has produced a vast population able
 to read but unable to distinguish what is worth
 reading.
G.M. Trevelyan

The trouble with the world is that the stupid are
 cocksure and the intelligent full of doubt.
Bertrand Russell

Every man who knows how to read has it in
 his power to magnify, to multiply the ways in
 which he exists, to make his life full, significant
 and interesting.
Aldous Huxley

Temptation usually comes in through a door that has deliberately been left open.

Arnold Glasow

There are many scapegoats for our sins, but the most popular is providence.

Mark Twain

Evil habits, once settled, are more easily broken than mended.

Quintillian

To maintain a fault known is a double fault.

John Jewel

Consider how hard it is to change yourself and you'll understand what little chance you have trying to change others.

Arnold Glasow

It is with our passion, as it is with fire and water, they are good servants but bad masters.

L'strange

A thing of beauty is a joy for ever;
Its loveliness increases;
It will never pass into nothingness.

Keats

Beauty is truth, truth beauty—that is all
Ye know on earth, and all ye need to know.

Keats

Some books are to be tasted, others to be swallowed, and some few to be chewed and digested.

Bacon

Since brevity is the soul of wit,

And tediousness the limbs and outward flourishes,

I will be brief.

Shakespeare

The old order changeth, yielding place to new,
And God fulfils himself in many ways,

Lest one good custom should corrupt the world.

Tennyson

The child is father of the man.

William Wordsworth

I came, I saw, I conquered.

(*Veni, Vidi, Vici*). *William Shakespeare*

Cowards die many times before their death;
The valiant never taste of death but once.

William Shakespeare

The government of the people, by the people, for the people shall not perish from the earth.

Abraham Lincoln

England expects every man to do his duty.

Lord Nelson

Oh, East is East, and West is West, and never the twain shall meet.

Till Earth and Sky stand presently at God's great judgement seat.

Rudyard Kipling

But be not afraid of greatness; some are born great, some achieve greatness and some have greatness thrust upon them.

William Shakespeare

Knowledge is power.

Francis Bacon

Where ignorance is bliss,

'Tis folly to be wise.

Thomas Grey

What's in a name? That which we call a rose,
By any other name would smell as sweet.

William Shakespeare

Peace hath her victories,
No less renown'd than war.

John Milton

Reading maketh a full man; conference a ready man; and writing an exact man.

Francis Bacon

Our sweetest songs are those that tell of saddest thoughts.

Shelley

Know them thyself, presume not God to scan;
The proper study of mankind is man.

Pope

To be or not to be; that is the question,
Whether 'tis nobler in the mind to suffer.
The slings and arrows of outrageous fortune;
Or to take arms against a sea of troubles,
And by opposing, end them.

William Shakespeare

Frailty, thy name is woman.

William Shakespeare

More things are wrought by prayer than this world dreams of.

Alfred Lord Tennyson

The woods are lovely, dark and deep
But I have promises to keep
And miles to go before I sleep,
And miles to go before I sleep

Robert Frost

Dilli Chalo !

Subhash Chandra Bose

Jana Gana Mana Adhinayak Jai He !

Rabindranath Tagore

Truth and non-violence are my God.

Mahatma Gandhi

Let a hundred flowers bloom and let a thousand schools of thought contend.

Mao Zedong

Jai Jawan, Jai Kisan. *Lal Bahadur Shastri*

To every action there is an equal and opposite reaction.

Issac Newton

Eureka! Eureka!

Archimedes

Swarajya is my birthright.

Bal Gangadhar Tilak

Hey Ram !

Mahatma Gandhi

Aram Haram Hai.

Jawaharlal Nehru

Just as I would not like to be a slave, so I would not like to be a master.

Abraham Lincoln

Where wealth accumulates, men decay.

Oliver Goldsmith

Nevertheless it moves.

Galileo

Power tends to corrupt, and absolute power corrupts absolutely.

Lord Acton

Man is by nature a political animal.

Aristotle

I have nothing to offer but blood, toil, tears, and sweat.

Winston Churchill

Thank God, I have done my duty.

Last words of Admiral Nelson

A single step for a man—a giant leap for mankind.

Neil Armstrong

For tools rush in where angels fear to tread.

Pope

Necessity is the mother of invention.

(Mater artium necessitas)

Unknown Latin Proverb—

Whom the gods love die young.

Byron

The light has gone outthe light that shone in this country was no ordinary light... For that light represented living truth.

Jawaharlal Nehru

Generations to come, it may be, will scarce believe that such a one as this ever in flesh and blood walked upon this earth.

Albert Einstein

...Seditious fakir striding half-naked up the steps of the Viceroy's palace there to negotiate and parley on equal terms with the representative of the King Emperor.

Winston Churchill

We have now to fight for peace with same courage and determination as we fought against aggression.

Lal Bahadur Shastri

And fools, who came to scoff,
Remained to pray.

Oliver Goldsmith

Full many a gem of purest ray serene,
The dark unlathomed caves of ocean bear.

Thomas Gray

Death is the end of life, ah why
Should life all labour be ?

Alfred Lord Tennyson

Good government is no substitute to self-government!

Morley

'Et tu, Brutel'

Shakespeare (Jullus Caesar)

Better to reign in hell than serve in heaven.

John Milton

Sweet are the uses of adversity,
Which like a toad, ugly and venomous,
Wears yet a precious jewel in his head.

William Shakespeare

All the world's a stage,
And all the men and women merely players.

William Shakespeare

Brevity is the soul of wit.

William Shakespeare

Man is born free and everywhere he is in chains.

Jean-Jacques Rousseau

At the stroke of midnight hour when the world sleeps, India will wake to life and freedom.

Jawaharlal Nehru

How sharper than a serpent's tooth it is
To have a thankless child!

William Shakespeare

B

BAC: Business Advisory Committee
BAI: Badminton Association of India
BALCO: Bharat Aluminium Company Limited
BARC: Bhabha Atomic Research Centre
BBC: British Broadcasting Corporation
BC: Before Christ
BCCI: Board of Control for Cricket in India;
 Bank of Credit and Commerce International
BCL: Bachelor of Civil Law
B Com: Bachelor of Commerce
BCG: Bacillus Calmette-Guérin (preventive vaccine for tuberculosis)
BDO: Block Development Officer
B Ed: Bachelor of Education
BEL: Bharat Electronics Limited
BENELUX: Belgium, Netherlands and Luxembourg
BHEL: Bharat Heavy Electricals Ltd.
BHU: Banaras Hindu University
BICP: Bureau of Industrial Costs and Prices
BIFR: Bureau of Industrial and Financial Reconstruction
BIPPA: Bilateral Investment Promotion and Protection Agreement
BIS: Bureau of Indian Standards
BITS: Birla Institute of Technology & Sciences
BJP: Bharatiya Janata Party
BKKP: Bhartiya Kisan Kamgar Party
BKU: Bharatiya Kisan Union
BMW: Bayerische Motoren Werke AG
BOAC: British Overseas Airways Corporation (now British Airways)
BOLT: Build-Own-Lease-Transfer
BP: Blood Pressure
BPE: Bureau of Public Enterprises
B Pharm: Bachelor of Pharmacy
BRO: Border Roads Organisation
B Sc: Bachelor of Science
BSF: Border Security Force
BSI: Botanical Survey of India
BSP: Bahujan Samaj Party
BSS: Bharat Sewak Samaj; British Standard specifications

C

C-DAC: Centre for Development of Advanced Computing
CAB: Civil Aeronautics Board; Central Advisory Board
CABE: Central Advisory Board for Education
CACP: Commission on Agricultural Costs and Prices
CADA: Command Area Development Agency
CAG: Comptroller and Auditor-General of India

Cantab: Cantabrigienis (of Cambridge)
CAPART: Council for Advancement of People's Action and Rural Technology
Capes: Computer-Aided Paperless Examination System
CARD: Centre for Astronomical Research and Development
CARE: Cooperative for American Relief Everywhere
CAS: Chief of the Air Staff
CASE: Commission on Alternative Sources of Energy
CASI: Centre for the Advanced Study of India
CAZRI: Central Arid Zone Research Institute
CBDT: Central Board of Direct Taxes
CBEC: Central Board of Excise and Customs
CBFC: Central Board of Film Certification
CBI: Central Bureau of Investigation
CBR: Central Board of Revenue
CBRI: Central Building Research Institute
CBSE: Central Board of Secondary Education
CBT: Children's Book Trust
CCI: Cricket Club of India; Cement Corporation of India
CCP: Cabinet Committee on Prices
CCS: Cash Compensatory Support
CD: Civil Defence; Community Development; Certificate of Deposit
CDAC: Centre for Development of Advanced Computing
CDRI: Central Drug Research Institute
CDS: Compulsory Deposit Scheme
CEC: Chief Election Commissioner; Chief Executive Councillor
CECRI: Central Electrochemical Research Institute
CEERI: Central Electronic Engineering Research Institute
CENTO: Central Treaty Organisation
CEO: Chief Electoral Officer
CERC: Consumer Education and Research Centre
CFSL: Central Forensic Science Laboratory
CGHS: Central Government Health Scheme
CGA: Central Ganga Authority
CGF: Commonwealth Games Federation
CGS: Centimetre Gram Second (units of measurement)
CHOGM: Commonwealth Heads of Government Meeting
CHOGRM: Commonwealth Heads of Government Regional Meeting
CIA: Central Intelligence Agency (U.S.A.)
C-in-C: Commander-in-Chief
CID: Criminal Investigation Department

ET: Central Institute of Educational Technology
IL: Central Institute of Indian Languages
IS: Commonwealth of Independent States
ISF: Central Industrial Security Force
ITU: Centre of Indian Trade Unions
IWTC: Central Inland Water Transport
 oration
LB: Company Law Board
LASP: Child Labour Action and Support Project
M: Chief Minister; Common Market
MA: Coal Mines Authority
MC: Computer Maintenance Corporation
MEA: Council for Mutual Economic Assistance
MERI: Central Mechanical Engineering
 earch Institute
MO: Chief Medical Officer
MP: Common Minimum Programme
NG: Compressed Natural Gas
NN: Cable News Network
NS: Chief of Naval Staff
O: Commanding Officer
OAS: Chief of Army Staff
OD: Cash On Delivery; Central Ordnance
 ot
OFEPASA: Conservation of Foreign Exchange
 Prevention of Smuggling Act
OL: Commonwealth of Learning
OMECON: Council for Mutual Economic
 istance
OMEX: Commonwealth Expedition
CONCORD: Council of North Indian States for
 operation and Regional Development
COPBA: Consumer Protection Act
COPU: Committee on Public Undertakings (of
 liament)
CPC: Civil Procedure Code
CORDET: Cooperative Rural Development Trust
CPCB: Central Pollution Control Board
CPF: Contributory Provident Fund
CPHERI: Central Public Health Engineering
 earch Institute
CPI: Communist Party of India
CPI(M): Communist Party of India (Marxist)
CPI(ML): Communist Party of India (Marxist-
 inist)
CPMT: Combined Pre-Medical Tests
CPSU: Communist Party of the Soviet Union
CPU: Committee on Public Undertakings;
 mmonwealth Press Union
CPWD: Central Public Works Department
CR: Central Railway; Chakravarty
 jagopalachari (Rajaji)
CRIS: Centre for Railway Information Systems
CRPF: Central Reserve Police Force
CRR: Cash Reserve Ratio

CRRI: Central Road Research Institute
CSCE: Conference on Security and Cooperation
 in Europe
CSDS: Centre for the Study of Developing
 Societies
CSO: Central Scientific Instruments
 Organisation
CSIR: Council of Scientific and Industrial
 Research
CSIS: Centre for Strategic and International
 Studies
CSIRO: Commonwealth Scientific and Industrial
 Research Organisation
CSD: Central Statistical Organisation
CSSRI: Central Soil Salinity Research Institute
CTBT: Comprehensive Test Ban Treaty
CST: Central Sales Tax
CTO: Central Telegraph Office; Central Tractor
 Organisation; Chief Technical Officer
CTV: Colour Television
CVC: Central Vigilance Commission
CVR: Cockpit Voice Recorder
CVRDE: Combat Vehicles Research
 Development Establishment
CWC: Central Warehousing Corporation
CWF: Consumer Welfare Fund
CWPC: Central Water and Power Commission
CWPRS: Central Water and Power Research
 Station
 cwt: hundredweight (112 lbs)

D

DA: Daily Allowance; Dearness Allowance
DAE: Department of Atomic Energy
DANICS: Delhi-Andaman Nicobar Island Civil
 Services
DAVP: Directorate of Advertising and Visual
 Publicity
D & C: Dilation and Curettage
DC: Direct Current; Deputy Commissioner
DCC: District Congress Committee
DCL: Doctor of Civil Law
DD: Doordarshan
DDT: Dichloro Diphenyl Trichloroethane
 (insecticide)
DFDR: Digital Flight Data Recorder
DG: Director General, Dei Gratia (By the Grace
 of God)
DGCA: Director General of Civil Aviation
DGHC: Darjeeling Gorkha Hill Council
DGMS: Directorate General of Mines Safety
DGS & D: Directorate General of Supplies and
 Disposals
DGTD: Directorate General of Technical
 Development
DIC: District Industries Centre

DIG: Deputy Inspector General
DIR: Defence of India Rules
DLO: Dead Letter Office (see RLO)
DM: District Magistrate
DMK: Dravida Munnetra Kazhagam
DNA: Di-oxyribonucleic Acid (biological elements)
DO: Demi-Official
DOO: Department of Ocean Development
DOE: Department of Electronics
DOTS: Directly Observed Treatment Short-Course

DP: Displaced Person
DPI: Director of Public Instruction
DPSA: Deep Penetration Strike Aircraft
D Phil: Doctor of Philosophy
DMI: Directorate of Marketing and Inspection
DRDO: Defence Research and Development Organisation

DRES: Department of Renewable Energy
Sources
DRF: Depreciation Reserve Fund
DRI: Differential Rate of Interest; Directorate of Revenue Intelligence
DSC: Distinguished Service Cross
DSIC: Defence Scientific Information and Documentation Centre
DST: Department of Science and Technology
DTH: Direct to Home
DVC: Damodar Valley Corporation
DVM: Doctor of Veterinary Medicine

E

EAC: Employment Assistance Centre
EARC: Economic Administrative Reforms Commission
EAS: Employment Assurance Scheme
ECA: Essential Commodities Act
ECAFE: Economic Commission for Asia and Far East (now ESCAP)

ECE: Economic Commission for Europe
ECG: Electrocardiogram
ECGC: Export Credit and Guarantee Corporation
ECHR: European Commission on Human Rights
ECM: European Common Market
ECOSOC: Economic and Social Council (UN)
ECS: Electronic Clearance Service
EDBI: Educational Development Bank of India
EEC: European Economic Community
EEG: Electro Encephalogram
EFA: Education For All
EFF: Extended Fund Facility
EFTA: European Free Trade Association
eg: exempli gratia (for example)
EIL: Engineers India Limited
E-In-C: Engineer-in-Chief

ELCINA: Electronics Component Industries Association
ELSS: Equity Linked Saving Scheme
EMF: Electro Motive Force
EMG: Electro Myogram
EMS: European Monetary System
EMU: Electric Multiple Unit, European Monetary Union

ENS: Eastern Newspapers Society
E & O E: Errors and Omissions Excepted
EOU: Export Oriented Units
EPCH: Export Promotion Council for Handicrafts
EPF: Employees Provident Fund
EPO: Earth Parking Orbit
EPRLF: Eam People's Revolutionary Liberation Front

EPZ: Export Processing Zone
ER: Eastern Railway
ERM: Exchange Rate Mechanism
ERNET: Educational and Research Network
ERS: European Remote Sensing (satellite)
ESA: European Space Agency
ESCAP: Economic and Social Commission for Asia and the Pacific

ESIC: Employees' State Insurance Corporation
ESMA: Essential Services Maintenance Act
ESP: Extra Sensory Perception
Est: Established
EST: Eastern Standard Time
etc: etcetera (and other)
ETV: Educational Television
ETTDC: Electronics Trade and Technology Development Corporation

EURATOM: European Atomic Community
EVM: Electronic Voting Machine
EVR: Electrovideo Recording
EW: East-West

F

FACT: Fertilisers & Chemicals Travancore Limited
FAO: Food and Agriculture Organisation (of United Nations)
FBI: Federal Bureau of Investigation (of U.S.A.)
FBTR: Fast Breeder Test Reactor
FCI: Food Corporation of India
FCNR: Foreign Currency Non-Resident
FCRA: Foreign Contribution Regulation Act
FDI: Foreign Direct Investment
FEDEX: Federal Express
FEMA: Foreign Exchange Management Act
FERA: Foreign Exchange Regulation Act
FICCI: Federation of Indian Chambers of Commerce and Industry
FIDE: International Chess Federation

FIEO: Federation of Indian Exports Organisations
FIFA: International Football Federation
FIH: International Hockey Federation
FI: Foreign Institutional Investor
FIPB: Foreign Investment Promotion Board
FIPC: Foreign Investment Promotion Council
FM: Field Marshal
fob: free on board
for: free on rail
FORE: Foundation for Organisational Research and Education
FPS: Foot-Pound-Second (units of measurement); Free Price Shop
FRCP: Fellow of Royal College of Physicians
FRCS: Fellow of Royal College of Surgeons
FRG: Federal Republic of Germany
FRGS: Fellow of Royal Geographical Society
FRS: Fellow of Royal Society
FTII: Films and Television Institute of India
FTS: Foreign Travel Scheme
FTU: Free Trade Union
FTZ: Free Trade Zone

G

GAIL: Gas Authority of India Limited
GAP: Ganga Action Plan
GATT: General Agreement on Tariff and Trade
GB: Great Britain
GCC: Gulf Control Council
GCF: Greatest Common Factor
GCM: Greatest Common Measure; General Court Martial
GDI: Gender-related Development Index
GDP: Gross Domestic Product
GDR: German Democratic Republic (East Germany); Global Depository Receipt
GEF: Global Environment Facility
GEM: Gender Empowerment Measure
GHC: Gorkha Hill Council
GHQ: General Headquarters
GI: Government Issue; General Issue
GIC: General Insurance Corporation
GIDC: Gujarat Industrial Development Corporation
GIEC: Global Indian Entrepreneurs Conference
GM: General Manager, General Motors
GMPS: Global Mobile Personnel Communications System
GMT: Greenwich Mean Time
GNLF: Gorkha National Liberation Front
GNP: Gross National Product
GOC: General Officer Commanding
GOI: Government of India
Govt: Government
GPF: General Provident Fund; Gandhi Peace Foundation

GPO: General Post Office
GRE: Graduate Record Examination
GRT: Gross Rated Tonnage
GSI: Geological Survey of India
GSLV: Geo-Satellite Launch Vehicle
GSP: Generalised System of Preference
GSTP: Global System of Trade Practices

H

HAI: Health Action International
HAL: Hindustan Aeronautics Limited
HC: House of Commons; High Court
HCF: Highest Common Factor
HDI: Human Development Index
HE: His Excellency; Her Excellency
HEH: His/Her Exalted Highness
HEMRL: High Energy Materials Research Laboratory
HF: High Frequency
HG: His/Her Grace
HH: Her Highness; His Highness; His Holiness
HHEC: Handicrafts and Handloom Exports Corporation
HIV: Human Immunodeficiency Virus
HLC: Humanitarian Law Commission (Red Cross)
HM: Her Majesty; His Majesty
HMI: Himalayan Mountaineering Institute
HMT: Hindustan Machine Tools; Head Micro Telephone
HMV: His Master's Voice
hp: horse power
HP: Harmonic Progression; Himachal Pradesh
HPU: Hill People's Union
HQ: Headquarters
Hr: Hour
HRH: His Royal Highness; Her Royal Highness
HSD: High Speed Diesel
HSL: Hindustan Steel Limited
HSTS: High Speed Tram System
HT: High Tension
HTR: High Temperature Reactor
HUDCO: Housing and Urban Development Corporation
HV: High Voltage
HZL: Hindustan Zinc Limited

I

IA: Indian Airlines
IAAF: International Amateur Athletic Federation
IAAS: Indian Audit and Accounts Service
IAC: Indian Airlines Corporation
IAEA: International Atomic Energy Agency
IAF: Indian Air Force
IAMC: Indian Army Medical Corps
IAMR: Institute of Applied Manpower Research
IARI: Indian Agricultural Research Institute

IAS: Indian Administrative Service
 IASRI: Indian Agricultural Statistical Research Institute
 IATA: International Air Transport Association
 IATP: Income Adjusted to Total Population
 ib, ibld: *Ibidem* (in the same place)
 I & B: Information and Broadcasting
 IBEF: India Brand Equity Fund
 IBM: International Business Machines; Indian Bureau of Mines
 IBRD: International Bank for Reconstruction and Development (World Bank)
 ICAA: International Civil Airports Association
 ICAL: Institute of Chartered Accountants of India
 ICAO: International Civil Aviation Organisation
 ICAR: Indian Council of Agricultural Research
 ICBL: International Campaign to Ban Landmines
 ICBM: Intercontinental Ballistic Missile
 ICC: International Chamber of Commerce; International Control Commission; International Cricket Conference
 ICCR: Indian Council for Cultural Relations
 ICCS: International Commission of Control and Supervision
 ICCW: Indian Council of Child Welfare
 ICDS: Integrated Child Development Scheme
 ICTU: International Confederation of Free Trade Unions
 ICHR: Indian Council of Historical Research
 ICICI: Industrial Credit and Investment Corporation of India
 ICJ: International Court of Justice
 ICOR: International Capital Output Ratio
 ICMR: Indian Council of Medical Research
 ICRC: International Committee of Red Cross
 ICRIER: Indian Council for Research on International Economic Relations
 ICRISSAT: International Crops Research Institute for the Semi-Arid Tropics
 ICS: Indian Civil Service
 ICSI: Institute of Company Secretaries of India
 ICSSR: Indian Council of Social Sciences Research
 ICSW: Indian Council of Social Welfare
 ICW: International Council of Women
 ICWA: Indian Council of World Affairs
 IDA: International Development Agency
 IDC: Industrial Development Corporation
 IDD: International Direct Dialling
 IDBI: Industrial Development Bank of India
 IDPL: Indian Drugs and Pharmaceuticals Limited
 IDRC: International Development Research Centre
 IDSA: Institute of Defence Studies and Analyses

ie: *id est* (that is)
 IES: Indian Economic Service
 IETE: Institution of Electronics and Telecommunications Engineers
 IFA: Indian Football Association
 IFAD: International Fund for Agricultural Development
 IFC: Industrial Finance Corporation; International Finance Corporation
 IFCI: Industrial Finance Corporation of India
 IFAD: International Fund for Agricultural Development
 IFFCO: Indian Farmers Fertilisers Corporation Limited
 IFFI: International Film Festival of India
 IFP: Inkatha Freedom Party
 IFS: Indian Foreign Service; Indian Forest Service
 IFU: International Federation of Trade Unions
 IFWJ: Indian Federation of Working Journalists
 IG: Inspector-General
 IGIA: Indira Gandhi International Airport
 IGNFA: Indira Gandhi National Forest Academy
 IGNOU: Indira Gandhi National Open University
 IGNP: Indira Gandhi Nahar Pariyojana
 IHF: Indian Hockey Federation
 IIAS: Indian Institute of Advanced Studies
 IIFT: Indian Institute of Foreign Trade
 IIT: Indian Institute of Information Technology
 IIMC: Indian Institute of Mass Communications
 IIP: Indian Institute of Petroleum
 IIPA: Indian Institute of Public Administration
 IIPA: International Intellectual Property Alliance
 IIRS: Indian Institute of Remote Sensing
 IISS: International Institute of Strategic Studies
 IIT: Indian Institute of Technology
 ILO: International Labour Organisation
 ILS: Instrument Landing System
 IMC: Indian Medical Council
 IMDT: Illegal Migrants Determination by Tribunal Act, 1983
 IMF: International Monetary Fund
 IMPPA: Indian Motion Picture Producers' Association
 IMPRES: Integrated Multi-train Passenger Reservation System
 IMS: Indian Medical Service
 IMT: Institute of Management and Technology
 IMY: Indira Mahila Yojana
 IN: Indian Navy
 INA: Indian National Army, Iraqi News Agency
 INFINET: Indian Financial Network
 INL: Indian National League
 INMARSAT: International Maritime Satellite Organisation
 INPEX: Indian National Philatelic Exhibition

INS: Indian Newspaper Society; Indian Navy Ship
INSA: Indian National Science Academy
INSAT: Indian National Satellite
INTACH: Indian National Trust for Art and Cultural Heritage
INTELEX: International Teleprinter Exchange
INTELSAT: International Telecommunication Satellite Consortium
INTERPOL: International Criminal Police Organisation
INTUC: Indian National Trade Union Congress
IOA: Indian Olympic Association
IOC: International Olympic Committee; Indian Oil Corporation
IOCOM: Indian Ocean Commonwealth
IOR-ARC: Indian Ocean Rim Association for Regional Cooperation
IOSCO: International Organisation of Securities Commission
IOU: I owe you
IPC: Indian Penal Code
IPCL: Indian Petro-chemicals Corporation Limited
IPEC: International Programme on the Elimination of Child Labour
IPKF: Indian Peace Keeping Force
IPR: Intellectual Property Rights
IPS: Indian Police Service
IPU: International Parliamentary Union
IQ: Intelligence Quotient
IRA: Irish Republican Army; Insurance Regulatory Authority
IRBM: Intermediate Range Ballistic Missile
IRC: International Red Cross
IRCON: Indian Railway Construction Company
IRCI: International Reconstruction Corporation of India
IRCS: International Red Cross Society
IRDP: Integrated Rural Development Programme
IREDA: Indian Renewable Energy Development Agency
IRNA: Iranian News Agency
IRRI: International Rice Research Institute
IRS: Indian Remote Sensing (satellite)
IRSE: Indian Railway Service of Engineers
ISBA: International Sea-Bed Authority
ISC: Indian Science Congress
ISCON: Indian Steel Construction Company
ISD: International Subscriber Dialling
ISDN: Integrated Services Digital Network
ISI: Indian Standards Institute; Inter-Services Intelligence (of Pakistan)
ISO: International Standardisation Organisation
ISRO: Indian Space Research Organisation

ISS: Islamic Sevak Sangh
IST: Indian Standard Time
ISTRAC: ISRO Telemetry, Tracking and Command Centre
ITBP: Indo-Tibetan Border Police
ITDC: India Tourism Development Corporation
ITI: Indian Telephone Industries; Industrial Training Institute
ITO: Income Tax Officer; International Trade Organisation
ITPO: Indian Trade Promotion Organisation
ITR: Interim Test Range
ITU: International Telecommunication Union
IUCD: intrauterine contraceptive device
IUML: Indian Union Muslim League
IUPEP: Integrated Urban Poverty Eradication Programme
IWAI: Inland Waterways Authority of India
IWDP: Integrated Watershed Development Programme
IYC: Indian Youth Congress

J

JANAM: Jan Natya Manch
JAAC: Jharkhand Area Autonomous Council
JCC: Junior Chamber of Commerce
JCO: Junior Commissioned Officer
JEIH: Jamaat-e-Islami Hind
JIPMER: Jawaharlal Institute of Post-graduate Medical Education and Research (Pondicherry)
J&K: Jammu and Kashmir
JNU: Jawaharlal Nehru University
JP: Janata Party; Jayaprakash Narayan; Justice of Peace
JPC: Joint Parliamentary Committee
JRC: Junior Red Cross
JKLF: Jammu and Kashmir Liberation Front
JMM: Jharkhand Mukti Morcha
JRY: Jawahar Rozgar Yojana
JVM: Janata Vidyarthi Morcha
JVP: Janata Vimukthi Peramuna

K

KANU: Kenya African National Union
KAVAL: Kanpur, Allahabad, Varanasi, Agra and Lucknow
KBE: Knight of British Empire
KC: King's Counsel
KCP: Karnataka Congress Party
Kg: Kilogram
KG: Kindergarten
KGB: Komitet Gosudarstvennoy Bezopasnosti (Committee for State Security)
KKK: Ku-Klux-Klan

KMT: Kuomintang (Nationalist Party of Taiwan)
KVA: Kilo-Volt-Ampere
KVIC: Khadi and Village Industries Commission
KVS: Kendriya Vidyalaya Sangathan
Kw: Kilowatt

L

L: 50 (in Roman numerals)
LAC: Line of Actual Control
LAN: Local Area Network
LASER: Light Amplification by Stimulated Emission of Radiation
lbw: leg before wicket (in cricket)
LCA: Light Combat Aircraft
LCM: Lowest Common Multiple
LDC: Least Developed Countries; Lower Division

Clerk

LEE: Licentiate in Electrical Engineering
LES: Lunar Escape System
LH: Left hand
LIC: Life Insurance Corporation
LL B: Legum Baccalareous (Bachelor of Laws)
LL D: Legum Doctor (Doctor of Laws)
LLM: Master of Laws
LM: Lunar Module
LME: Licentiate in Mechanical Engineering
LMG: Light Machine Gun
LNG: Liquefied Natural Gas
LOAC: Line of Actual Control
LoC: Line of Control
Loc cit: loco citato (at the place quoted)
LPG: Liquefied Petroleum Gas
LPT: Licentiate in Printing Technology
LSA: Lok Shakti Abhiyan
LSD: dextro-lysergic acid diethylamide (hallucinogen)
Lt: Lieutenant
LTC: Leave Travel Concession
Ltd: Limited
LTTE: Liberation Tigers of Tamil Eelam
LZ: Landing Zone

M

M: 1000 (in Roman numerals)
MAMC: Mining and Allied Machinery Corporation
MAT: Management Aptitude Test, Minimum Alternate Tax
MBA: Master of Business Administration
MBBS: Bachelor of Medicine and Bachelor of Surgery
MBFC: Mutual Benefit Financial Company
MBRS: Multi-Barrel Rocket System
MBT: Main Battle Tank
MC: Master of Ceremonies; Municipal Commissioner; Municipal Committee; Medical Certificate

MCA: Monetary Compensatory Account; Master of Computer Application
MCC: Marylebone Cricket Club; Missile Control Centre

MCI: Medical Council of India
MTCR: Missile Technology Control Regime
MD: Managing Director; Doctor of Medicine
MDS: Master of Dental Surgery
ME: Mechanical Engineer
MECON: Metallurgical and Engineering Consultants

M Ed: Master of Education
MES: Military Engineering Service
MFA: Multi-Fibre Agreement
MFN: Most Favoured Nation
Mt: Military Intelligence
MIBOR: Mumbai Inter-Bank Offered Rate
MIC: Methylene isocyanate
MIGA: Multilateral Investment Guarantee Agency

MISA: Maintenance of Internal Security Act
MLA: Member of Legislative Assembly; Money Laundering Act

MLC: Member of Legislative Council
MMDS: Multi-Channel Microwave Distribution System

MMMF: Money Market Mutual Fund
MMTC: Minerals and Metals Trading Corporation
MNAMS: Member of the National Academy of Medical Sciences

MNC: Multinational Corporation
MNF: Mizo National Front
MO: Money Order; Medical Officer
MODVAT: Modified Value Added Tax
MONEX: Monsoon Experiment
MOU: Memorandum of Understanding
MOX: Mixed Oxide Fuel
MP: Member of Parliament; Military Police; Madhya Pradesh

MPA: Master of Public Administration
MPF: Multinational Protection Force
mpg: miles per gallon
mph: miles per hour
mps: metres per second
MQM: Mohajir Quami Movement (of Pakistan)
MRA: Moral Re-armament
MRAS: Member of the Royal Academy of Sciences

MRCP: Member of Royal College of Physicians
MRCS: Member of Royal College of Surgeons
MRCVS: Member of Royal College of Veterinary Surgeons

MRD: Movement for Restoration of Democracy (in Pakistan)
MRTPC: Monopolies and Restrictive Trade Practices Commission

MRTS: Mass Rapid Transit System
MRVC: Mumbai Railway Vikas Corporation
M. Sc: Master of Science
MSS: Manuscripts
MSW: Master of Social Work
MSY: Mahila Samridhi Yojna
MTCR: Missile Technology Control Regime
MTV: Music Television

N

NAAI: National Airport Authority of India
NABARD: National Bank for Agriculture and Rural Development
NAFTA: North America Free Trade Agreement
NALCO: National Aluminium Company Limited
NAM: Non-Aligned Movement
NAMS: National Academy of Medical Science
NAPP: Narora Atomic Power Plant
N & Q: Notes and Queries
NARO: National Amnesty and Redemption Organisation
NASA: National Aeronautics and Space Administration (of U.S.A.)
NASSCOM: National Association of Software and Service Companies
NATO: North Atlantic Treaty Organisation
NAWO: National Alliance for Women
NAYE: National Alliance of Young Entrepreneurs
NB: *nota bene* (mark well)
NBA: Narmada Bachao Andolan
NBDB: National Book Development Board
NBFC: Non-banking Finance Company
NBT: National Book Trust
NCA: National Commission on Agriculture
NCAER: National Council of Applied Economic Research
NCB: Narcotics Control Board
NCBC: National Commission for Backward Classes
NCBE: National Confederation of Bank Employees
NCC: National Cadet Corps
NCDC: National Coal Development Corporation
NCERT: National Council of Educational Research and Training
NCL: National Centre for Labour
NCNA: New China News Agency
NCO: Non-Commissioned Officer
NCRB: National Capital Region Board
NCSC & ST: National Commission for Scheduled Castes & Scheduled Tribes
NCST: National Committee of Science and Technology; National Conference on Science and Technology
NCTE: National Council for Teachers Education

N'CYP: National Centre of Films for Children and Young People
NCW: National Commission on Women
NDA: National Defence Academy; National Democratic Alliance
NDC: National Development Council
NDDB: National Dairy Development Board
NDFB: National Democratic Front of Bodoland
NDRI: National Dairy Research Institute
NDTF: National Democratic Teachers Front
NE: North-East
NEC: North-Eastern Council
NEDC: National Economic Development Council
NEM: National Elementary Education Mission
NEERI: National Environmental Engineering Research Institute
NEHU: North-Eastern Hill University
NEP: New Education Policy
NER: North Eastern Railway
NEFA: North East Frontier Agency
NES: National Extension Service
NEW: Net Economic Welfare
NF: National Front
NFAI: National Film Archives of India
NFC: Nuclear Fuel Complex
NFDC: National Film Development Corporation
NFIR: National Federation of Indian Railwaymen
NFR: Northeast Frontier Railway
NGO: Non-Governmental Organisation
NGRI: National Geophysical Research Institute
NHAI: National Highway Authority of India
NHB: National Housing Bank
NHPC: National Hydro-electric Power Corporation
NHRC: National Human Rights Commission
NIB: National Investment Bank
NIC: National Integration Council; National Informatics Centre
NICD: National Institute of Communicable Diseases
NICO: New Information and Communication Order
NID: National Institute of Designs (Ahmedabad)
NIDC: National Industrial Development Corporation
NIDS: National Immunisation Days
NIESBUD: National Institute of Entrepreneurship and Small Business Development
NIFT: National Institute of Fashion Technology
NIH: National Institute of Immunology; National Information Infrastructure
NIIT: National Institute of Information Technology
NIM: Nehru Institute of Mountaineering
NNP: National Nutrition Policy
NIO: National Institute of Oceanography

NIOT: National Institute of Ocean Technology
NIPFP: National Institute of Public Finance and Policy

NIS: Netaji Subhash Institute of Sports
NISTADS: National Institute of Science, Technology and Development Studies

NLF: National Liberation Front (Vietnam)
NLM: National Literacy Mission
NLTA: National Lawn Tennis Association
NMDC: National Mineral Development Corporation

NMEP: National Malaria Eradication Programme
NMNH: National Museum of Natural History
NOC: No Objection Certificate
non seq: now sequitur (it does not follow)
NP: Notary Public
NPC: National Productivity Council
NPCC: National Projects Construction Corporation

NPP: National Perspective Plan
NPT: Non-Proliferation Treaty
NR: Northern Railway
NRA: National Reconstruction Army
NRC: Nuclear Regulatory Commission (of U.S.);

National Register of Citizens
NRDC: National Research Development Corporation
NREGP: National Rural Employment Guarantee Programme

NRF: National Renewable Fund
NRI: Non-Resident Indian
NRSA: National Remote Sensing Agency

NRV: Nehru Rozgar Yojana
NS: North-South
NSA: National Security Act; National Security Agency (of U.S.)

NSAP: National Social Assistance Programme
NSC: National Security Council; National Saving Certificate

NSC: National Sports Club of India
NSCN: National Socialist Council of Nagaland

NSD: National School of Drama
NSG: National Security Guards
NSIC: National Small Industries Corporation

NSS: National Service Scheme
NSSO: National Sample Survey Organisation
NSUI: National Students Union of India

NTC: National Textile Corporation
NTP: National Temperature and Pressure

NTPC: National Thermal Power Corporation
NTS: National Testing Service

NUJ: National Union of Journalists
NVF: National Volunteer Force

NW: North-West
NWDA: National Water Development Agency

NWGP: National Working Group on Power
NWRC: National Water Resources Council

O

OAPEC: Organisation of Arab Petroleum Exporting Countries

OAS: Organisation of American States
OAU: Organisation of African Unity

OBC: Other Backward Classes
OBE: Officer (or the Order) of the British Empire

OC: Officer Commanding
OCS: Overseas Communication Service

ODA: Official Development Assistance
OECD: Organisation of Economic Cooperation and Development

OECF: Overseas Economic Cooperative Fund
OEEC: Organisation for European Economic Cooperation

OGL: Open General Licence
OIC: Organisation of Islamic Conference

OIDB: Oil India Development Board
OIGS: On Government of India Service

OIL: Oil India Limited
OK: *or* correct (all correct, all right)

ONGC: Oil and Natural Gas Commission
op cit: *opere citato* (in the work cited)

OPEC: Organisation of Petroleum Exporting Countries
OPF: Ordnance Parachute Factory

OSCE: Organisation for Security and Cooperation in Europe

OTCEI: Over the Counter Exchange of India
OTS: Officers' Training School (military)

P

PAC: Public Accounts Committee; Provincial Armed Constabulary; Political Affairs Committee

PATA: Pacific Asia Travel Association
PBS: Public Broadcasting Service

PBX: Private Branch Exchange (telephone)
PC: Privy Council; Petty Cash

PCC: Pradesh Congress Committee
PCI: Press Council of India

PCS: Provincial Civil Service
PDA: Preventive Detention Act

PDPA: People's Democratic Party (Afghanistan)
PDS: Public Distribution System

PEC: Projects and Equipment Corporation
PEN: Poets, Editors and Novelists Association

PESB: Public Enterprises Selection Board
PFC: Power Finance Corporation

PGA: Parliamentarians for Global Action
PHC: Primary Health Centre

PIA: Pakistan International Airways
PIB: Press Information Bureau
PIN-Code: Postal Index Number-Code
PIO: Persons of Indian Origin
PLO: Palestine Liberation Organisation
PLOTE: People's Liberation Organisation of
 amil Eelam
PLR: Prime Lending Rates
pm: post meridiem (after noon); post mortem
PM: Prime Minister
PMG: Post Master General
PML: Pakistan Muslim League
PO: Post Office; Postal Order
POA: Programme of Action; Power of Attorney
POK: Pakistan Occupied Kashmir
POW: Prisoner of War
PP: Particular Person; Public Prosecutor
PPF: Planet Protection Fund
PPP: Pakistan People's Party
PRO: Public Relations Officer
Pro tem: *pro tempore* (for the time being)
Prox: proximo (in the next month)
PS: Postscript; Personal Secretary; Private
 Secretary
PSC: Public Service Commission
PSLV: Polar Satellite Launch Vehicle
PT: Physical Training
P&T: Posts & Telegraphs
PTA: Parent-Teacher Association; Pilotless
 Target Aircraft
PTBT: Partial Test Ban Treaty
PTI: Press Trust of India
PTO: Please Turn Over
PUDR: The People's Union for Democratic Rights
PVC: Param Vir Chakra
PVSM: Param Vishisht Seva Medal
PWD: Public Works Department
PWG: People's War Group

Q

QCT: Quality Council of India
QED: *quod erat demonstrandum* (which was to
 be proved)
QEF: *quod erat faciendum* (which was to be
 done)
QEI: *quod erat inveniendum* (which was to be
 found)
Qr: Quarter
QMG: Quarter Master General
QMT: Quantitative Management Technique
qv: *quod vide* (which see)

R

RADAR: Radio Detecting and Ranging
RAF: Royal Air Force (of U.K.); Rapid Action
 Force (India)

RAW: Research and Analysis Wing
RAX: Random Access Exchange
RBI: Reserve Bank of India
RCC: Reinforced Cement Concrete
RDA: Rural Development Agency
RDSO: Research, Designs and Standard
 Organisation
REACH: Rehabilitate, Educate and Support
 Street Children
REC: Rural Electrification Corporation; Regional
 Engineering College
REP: Replenishment Export Permit
R&D: Research and Development
RI: Rigorous Imprisonment
RIMC: Rashtriya Indian Military College
RTES: Rail India Technical and Economic
 Services
RJD: Rashtriya Janta Dal
RJP: Rashtriya Janta Party
RLEGS: Rural Landless Employment Guarantee
 Scheme
RLM: Rashtriya Loktantrik Morcha
RLO: Returned Letter Office (formerly DLO —
 Dead Letter Office)
RMO: Resident Medical Officer
RMS: Railway Mail Service
RNA: Ribonucleic Acid
RNO: Resident Naval Officer
ROBERT: Rocket Borne Emergency Radio
 Transmitter
RPF: Railway Protection Force
RPM: Revolutions Per Minute
RPV: Remote-controlled Pilotless Vehicle
RRB: Rural Regional Bank
RRC: Regional Reactor Centre
RSP: Rourkela Steel Plant; Revolutionary
 Socialist Party
RSS: Rashtriya Swayamsewak Sangh
RSVP: *Repondez sil vous plait* (please reply)
RTA: Railway Territorial Army
RTC: Round Table Conference

S

SAARC: South Asian Association for Regional
 Cooperation
SAC: Space Application Centre; Science
 Advisory Council
SAD: Shiromani Akali Dal
SADCC: South African Development
 Coordination Council
SADF: South Asian Development Fund
SAEC: South Asian Economic Community
SAFTA: South-Asian Free Trade Agreement
SAI: Sports Authority of India
SAIL: Steel Authority of India Limited
SALT: Strategic Arms Limitation Treaty

SAM: Surface-to-Air Missile
SAPTA: South Asian Preferential Trading Arrangement
SARF: South Asia Regional Fund
SAS: Subordinate Accounts Service, Small Astronomy Satellite
SATTE: South Asia Travel and Tourism Exchange
SC: Scheduled Castes; Space Commission; Supreme Court; Security Council
SCBA: Supreme Court Bar Association
SCI: Shipping Corporation of India
SCOPE: Standing Committee of Public Enterprises
SDI: Strategic Defence Initiative
SDO: Sub-Divisional Officer
SDR: Special Drawing Rights
SEATO: South East Asia Treaty Organisation
SEBC: Socially and Educationally Backward
SEBI: Securities Exchange Board of India
SEPU: Self-Employment Programme for the Urban Poor
SER: South Eastern Railway
SEWA: Self-Employed Women's Association
SFC: State Financial Corporation
SFI: Students Federation of India
SGPC: Shiromani Gurudwara Prabandhak Committee
SHAR: Sriharkota Tracking Station
SHCIL: Stock Holding Corporation of India Ltd.
SIA: Singapore Airlines
SIDBI: Small Industries Development Bank of India
SIDC: State Industrial Development Corporation
SIEMA: Southern India Engineering Manufacturers Association
SIPRI: Stockholm International Peace Research Institute
SIT: Special Investigation Team
SITA: Suppression of Immoral Traffic in Women and Girls Act
SITE: Satellite Instruction Television Experiment
SLBM: Sea-Launch Ballistic Missile
SLFP: Sri Lanka Freedom Party
SLR: Statutory Liquidity Ratio
SLV: Satellite Launch Vehicle
SNIPES: Society of National Institutes for Physical Education and Sports
SO: Special Officer; Section Officer
SOS: Save Our Souls—distress signal
SP: Superintendent of Police
SPCA: Society for the Prevention of Cruelty to Animals
SPE: Special Police Establishment
SPG: Special Protection Group

SR: Southern Railway; Supplementary Rules
SRAM: Short Range Attack Missile
SRI: Systems Research Institute
SRO: Statutory Rules and Orders
SS: Steamship
SSB: Service Selection Board
SSC: Staff Selection Commission
SSM: Surface to Surface Missile
SST: Supersonic Transport
ST: Scheduled Tribes
STARS: Satellite Tracking and Ranging Station
START: Strategic Arms Reduction Talks
STC: State Trading Corporation
STD: Subscriber Trunk Dialling (telephone); Sexually Transmitted Disease
STEP: Satellite Telecommunication Experiment Project
STF: Special Trust Fund
SUNFED: Special United Nations Fund for Economic Development
SW: South-West
SWAPO: South-West Africa People's Organisation
SWIFT: Society for World-wide International Financial Transactions
SYL: Sulej-Yamuna Link

T

TA: Travelling Allowance; Territorial Army
TAB: Tetanus anti-bacilli (for inoculation against tetanus)
TAC: Technical Advisory Committee
TACDE: Tactics and Aircraft Development Establishment
TAX: Trunk Automatic Exchange
TB: Tubercle bacillus (Tuberculosis); Torpedo Boat
TC: Transfer Certificate; Ticket Collector; Trusteeship Council
TCIL: Telecommunication Consultants India Limited
TDA: Trade Development Authority
TDP: Telugu Desam Party
TDS: Tax Deduction at Source
TELCO: Tata Engineering and Locomotive Company
TELEX: Teleprinter Exchange
TERI: Tata Energy Research Institute
TERLS: Thumba Equatorial Rocket Launching Station
TFAI: Trade Fair Authority of India
TGS: Trade Guarantee Scheme
THDP: Tehri Hydro Development Project
THI: Temperature Humidity Index
TIFAC: Technology Information, Forecasting and Assessment Council

TIFR: Tata Institute of Fundamental Research
TISCO: Tata Iron and Steel Company
TMC: Tamil Maanila Congress
TMO: Telegraph Money Order
TNC: Transnational Corporation
TNT: Tri nitro toluene (explosive)
TNV: Tripura National Volunteers
TOEFL: Test of English as a Foreign Language
TPDS: Targeted Public Distribution System
TRAI: Telecom Regulatory Authority of India
TRIPS: Trade-Related Intellectual Property

Rights

TRYSEM: National Scheme of Training for Rural Youth for Self-Employment
TTD: Tirumala Tirupati Devasthanam
TTE: Travelling Ticket Examiner
TTCI: Tea Trading Corporation of India
TULF: Tamil United Liberation Front
TV: Television
TWA: Trans-World Airlines (of U.S.A.)

U

UAD: United Akali Dal
UAE: United Arab Emirates
UAR: United Arab Republic
UAV: Unmanned Aerial Vehicle
UC: Upper Case (capital letter)
UDC: Upper Division Clerk
UDF: United Democratic Front
UDI: Unilateral Declaration of Independence
UFO: Unidentified Flying Object
UGC: University Grants Commission
UHF: Ultra High Frequency
UK: United Kingdom
ULF: United Legislature Front
ULFA: United Liberation Front of Assam
ULMS: Undersea Long-range Missile System
ult: ultimo (in last month)
UN: United Nations
UNAEC: United Nations Atomic Energy Commission
UNCED: United Nations Conference on Environment and Development
UNCHS: United Nations Commission on Human Settlements
UNCITRAL: United Nations Conference on International Trade Law
UNCLOS: United Nations Conference on the Law of the Sea
UNCNRSE: United Nations Conference for New and Renewable Sources of Energy
UNCOD: United Nations Conference on Desertification
UNCSTD: United Nations Conference on Science and Technology for Development

UNCTAD: United Nations Conference on Trade and Development
UNDC: United Nations Disarmament Commission
UNDOF: United Nations Disengagement Observer Force
UNDP: United Nations Development Programme
UNESCO: United Nations Educational, Scientific and Cultural Organisation
UNFPA: United Nations Fund for Population Activities

UNHCR: United Nations High Commissioner for Refugees

UNI: United News of India
UNIC: United Nations Information Centre
UNICEF: United Nations Children's Fund
UNIDO: United Nations Industrial Development Organisation

UNIIMOG: United Nations Iran-Iraq Observer Group
UNIKOM: United Nations Iraq-Kuwait Observer Mission

UNISCA: United States-Indo Commercial Alliance
UNISPACE: United Nations Conference on Peaceful Uses of Space

UNP: United National Party (of Sri Lanka)
UNPROFOR: United Nations' Protection Force

UNSC: United Nations Security Council
UNSCOM: UN Special Commission
UNTAC: United Nations' Transitional Authority in Cambodia

UNTAG: United Nations Transition Assistance Group

UP: Uttar Pradesh
UPSC: Union Public Service Commission
UPU: Universal Postal Union
USA: United States of America
USAID: United States Agency for International Development

USIS: United States Information Service
USOC: United States Olympic Committee
UTI: Unit Trust of India

V

V: Five (Roman numeral)
Vabal: Value Based Advanced Licensing
VAT: Value Added Tax
VC: Vice-Chancellor; Victoria Cross
VCR: Video Cassette Recorder
VCRC: Vector Control Research Centre
VD: Venereal Disease
VDIS: Voluntary Disclosure Income Scheme
VECC: Variable Energy Cyclotron Centre
VHF: Very High Frequency

VHP: Vishwa Hindu Parishad
VIP: Very Important Person
VOA: Voice of America
VPP: Value Payable Post
VRDE: Vehicles Research and Development Establishment
VSNL: Videsh Sanchar Nigam Limited
VSP: Visakhapatnam Steel Plant
VSSC: Vikram Sarabhai Space Centre

W

WAPCOS: Water and Power Development Consultancy Services (India) Limited
WASME: World Assembly of Small and Medium Enterprises
WAY: World Assembly of Youth
WCO: World Customs Organisation
WEF: World Economic Forum
WFP: World Food Programme
WFS: World Food Summit
WFTU: World Federation of Trade Unions
WHO: World Health Organisation
WILL: Wireless in Local Loop
WIPO: World Intellectual Property Organisation
WMA: Ways & Means Advances
WMO: World Meteorological Organisation

WOMEC: World Mining Environment Congress
WOP: Warrant of Precedence
WP: Word Processor
WPI: Wholesale Price Index
WR: Western Railway
WTO: World Tourism Organisation; World Trade Organisation
WWF: World Wide Fund for Nature

X

XLRI: Xavier's Labour Research Institute
X-mas: Christmas

Y

YMCA: Young Men's Christian Association
YWCA: Young Women's Christian Association

Z

ZANU: Zimbabwe African National Union
ZAPU: Zimbabwe African People's Union
ZBB: Zero-Based Budgeting
ZETA: Zero Energy Thermionuclear Assembly
ZPG: Zero Population Growth
ZS: Zoological Society
ZSI: Zoological Survey of India
ZUPO: Zimbabwe United People's Organisation

8. Terminology

A

Abdication: Formal surrender of power and privileges; renunciation of sovereignty.

Absolute Monopoly: It refers to a condition of the market where only one seller has total command or control over the sale of a given article. It is also called perfect monopoly. In normal circumstances such a condition does not occur.

Acupuncture: It is a Chinese medical practice that attempts to cure illness by puncturing specified areas of the skin with needles.

Adjournment: Suspension of the sitting of a legislative body either by the Speaker or on the demand by the majority of the members of the House. A House is adjourned automatically if a full quorum is not present.

Adult Franchise: Right to vote conferred on every adult, without any distinction, to elect the candidate of his or her choice.

Adultery: A voluntary sexual intercourse between a married person and someone other than his or her legal partner. It is one factor that contributes to "irretrievable breakdown" of marriage in cases of judicial separation or divorce.

Ad Valorem Duty: It refers to the duty or tax imposed on the commodity depending upon the value of the commodity.

Affidavit: A written declaration of evidence on oath for use as judicial proof (stated on faith).

Agglomeration: It is an act to collect or gather together into a cluster or mass. Firms in manufacturing or trading business with related products located in close proximity in order to reduce transport costs and other overheads.

Algorithm: A prescribed set of well defined rules or processes for the solution of a problem in a series of steps.

Alphanumeric Field: A data field in which alphabetic, numeric and special characters are accepted.

Allegiance: Loyalty (of a subject to the ruler; of a member to the party).

Alien: One belonging to another country and not enjoying the rights of citizenship.

Alma Mater: Benign mother, applied by alumni to their school, college or university.

Ambassador: Person of ministerial rank sent by a sovereign State on a mission or as representative to a foreign country.

Amnesty: General pardon conferred on convicts, or exemption from prosecution or punishment to political and other offenders, on special occasions.

Anachronism: Chronological error, anything not in keeping with chronology; anything done or existing out of date, out of harmony with the present.

Analog Computer: A computer that represents its data in the form of a measurement (feet, degrees, volts, etc.) of an actual property.

Anarchy: Absence of government. Disorder. Utopian concept of perfect government on the principle that the best government governs (uses force) the least.

Antyodaya: A scheme which aims at uplifting the economically weakest section of society. Rajasthan was the first State in which this scheme was introduced. Selected poorest families in a particular village were chosen and government assistance was given to bring them up to a certain level. No longer in vogue.

Apartheid: A South African word meaning "apartness"; hence policy of racial segregation to secure total estrangement between black and white people; colour bar against non-white or coloured people. Apartheid has ceased to exist after black majority government came to power in 1994.

Appeasement: Policy of giving in to a powerful adversary, even sacrificing principles; pacifying an opponent by submitting to undue demands (originally used for Neville Chamberlain in 1938-39).

Aristocracy: Government by political power of nobility or privileged class, nobles or all those who by birth or fortune rank above the rest of the community.

Arithmetic Logic Unit (ALU): The component of a CPU responsible for the performance of arithmetic and logical operations.

Arithmetic Operation: The performance of one of the fundamental operations of addition, subtraction, multiplication, division and exponentiation.

Arithmetic Progression: It is a sequence in which each term is obtained by the addition of constant number to the preceding term, as 1, 4, 7, 10, 13 and 6, 1, -4, -9, -14.

Armistice: Temporary suspension of war, a short truce, may or may not lead to peace.

Assembler: In computer terminology, it refers to the translating programme used to convert assembly language to machine language.

Associated Company: When two independent joint stock companies are connected or associated

in some specific manner, it is called an associated company.

Astronaut: A person engaged in or trained for space flights. This term was coined by U.S.

Astronomer: A person who is skilled in astronomy or who makes scientific observation of the celestial phenomena.

Asylum: Shelter; protection granted to a foreign national; any place of refuge.

Attache: Junior official attached to an ambassador to advise on military, air, naval, economic or other matters.

Authorised Capital: It refers to the maximum capital that a public limited company can raise through public subscription by sale of shares.

Autocracy: Dictatorship; an absolute government by one man; despotism.

Automation: A self-moving machine or one that moves by concealed machinery; a human being acting mechanically.

Autonomy: Right of limited self-government; partial self-government.

B

Bail: Temporary release from imprisonment of an accused person on furnishing surety or security to appear in court for trial.

Balance of Payments: Balance of payments of a country provides a statement of account which gives in brief a picture of the overall transactions with other countries over a specific period of time. It is a sort of balance sheet which are recorded a country's external claims and obligations. Unlike balance of trade, balance of payments always balances. Care has to be taken on composition of higher duty on export as it affects the country's balance of payments position.

Balance of Power: Political doctrine that power groups should be so balanced that no one group can get predominance over another.

Balance Sheet: Statement of account over a specified period of time showing assets and liabilities under specific heads from which the soundness or otherwise of an institution or organisation is determined.

Bale out: The act of dropping from the aeroplane by means of a parachute.

Ballot: A secret vote or method of voting by inserting a paper or ticket into a box or pushing a particular button on a machine.

Bank Credit: Purchasing power provided by banks in excess of their cash balances. because of reason of public confidence in their stability.

Bank Note: Paper currency issued by the Reserve Bank; a promissory note payable by

bank payable to bearer on demand without interest and acceptable as money.

Bank Rate: The rate of interest charged by the Reserve Bank of India for lending to commercial banks.

Base Date: For the preparation of Index number and to find out the changes in the value of money, some normal period or date is made the starting point. It is called the base date. It is given the value of 100.

Basic: (Beginner's All-purpose Symbolic Instruction Code). A Simple English like language which is easy to learn and also interactive in nature.

Basic Education: System of education first propounded by Mahatma Gandhi for students to get vocational training in addition to reading and writing.

Barter: Trade by exchanging one commodity for another.

Bear: A stock exchange term denoting a falling market when speculators sell stock in the hope of buying again at lower prices. Buyer's market (opposite of Bull).

Bearer Cheque: A cheque which is encashable by bearer (person holding cheque).

Bhoodan: Voluntary land gift movement started by Acharya Vinoba Bhave in 1951 to reduce economic inequality in the country.

Bicameral: Legislature, functioning with two chambers, lower house and upper house—Lok Sabha and Rajya Sabha in India; House of Commons and House of Lords in U.K.

Big Four: U.S.A., Russia, U.K and France (now Big Five with China) as UN members.

Bigamy: The offence of marrying a person while already lawfully married to another. In some countries marriage to more than one wife or husband is lawful.

Bilateral Agreement: Agreement between two countries or parties.

Binary: 1. The number representation system with a base of two (usually using 0 and 1 as digits).

2. A characteristic or property involving a selection, choice or property in which there are only two possibilities.

Birth Rate: It is the proportion of the number of births in a place in a given time to the total population. It is usually expressed as a quantity per 1000 people in a population per year.

Blackmail: The criminal offence of extorting money with threats of detrimental action, such as exposure of some misconduct on the part of the victim.

Black Market: Profiteering (usually illegal) by hoarding and selling at exorbitant prices, without accounting or with false accounting.

Black Money: Money accumulated by way of illegal transactions without declaring it for tax purposes.

Blasphemy: A written or spoken insult directed against religious belief or sacred things with deliberate intent to outrage believers.

Bloc: An association of legislative members or of political parties or groups formed to support a certain measure or group.

Blue Book: Popular name for an official report, statistical or other government publication which, because of its bulk, is provided with a blue cover of stouter quality than the inside pages.

Bolshevism: The political doctrine of Bolsheviks (in Russian, *Bolshevik* means majority within the party). It is the doctrine of Proletarian dictatorship as advocated in Russia by the Bolsheviks led by V. I. Lenin.

Bonus: Payment in addition to wages and salaries for employees, and in addition to dividend for shareholders.

Bourgeoisie: As defined by Engels, capitalism splits society into two classes, namely, the Bourgeoisie who are the owners of the means of production and the Proletariat, the wage earners who have to live on the basis of sale of their labour to owners of means of production.

Bootleg: To manufacture, sell or transport for sale (usually alcoholic beverages) contrary to law.

Brain Drain: Talented men leaving their own country for lack of opportunities and facilities, and going away to foreign countries which provide better conditions.

Brain Trust: A small body of expert advisers concerned specially with planning and strategy and often lacking official or acknowledged status.

Brainwashing: A forcible indoctrination to induce someone (usually an enemy) to give up basic political, social or religious beliefs and attitudes, and to accept contrasting regimented ideas.

Budget: A statement of anticipated revenue and expenditure of a sovereign body for a given period of time.

Budgetary Deficit: The difference between all the receipts (revenues as well as capital receipts) and the total expenditure (both revenue expenditure plus capital expenditure).

Bull: It refers to that sort of a speculator, who stands to gain with a rise in the price of shares and stocks.

Bureaucracy: An administrative policy-making group of civil servants; official domination in

government (Previously used for ICS. Now referred to whole civil services including IAS).

Busman's Holiday: A vacation or a day off from work spent in an activity closely resembling one's work, e.g., a bus driver driving his car, a mailman taking a walk, etc. A busman's holiday is no holiday; it is holiday only in name.

Buyer's Market: A market where goods and services are available in plentiful and the prices are relatively low.

By-election: Special election held between regular elections to fill vacancy caused by resignation or death of a member.

Byte: A contiguous set of binary digits (bits), usually comprising eight bits operated upon as a unit to store/retrieve information, i.e. an address may be associated with it.

C

Cabinet: A body of advisers or ministers of a sovereign or other heads of State each of whom holds one or more important portfolios in a government.

Camouflage: Concealing of objects by various means to deceive the enemy about their location and thereby protecting them from air and land attacks.

Capital Gain: It refers to the increase in the value of the fixed capital assets. It accrues when the sale of the fixed assets fetches more than the amount spent on their purchase.

Capital Punishment: A punishment by death; methods of execution include electrocution, lethal gas, hanging, shooting, lethal injection, garroting and decapitation. A large number of countries have abolished the death penalty for all offences but a few still retain it.

Capitalism: A system under which private entrepreneurs have complete freedom to devise and control production and distribution for their own profits, competition being the only limiting factor.

Cash Crops: Crops which are considered easily marketable. These are mostly non-food crops and include tea, coffee, cotton, jute, oil seeds, tobacco, rubber, etc.

Cash Ratio: It refers to the ratio of aggregate bank holdings of cash against its aggregate liabilities above a particular time.

Casting Vote: A deciding vote cast by a presiding officer in case of a tie.

Caucus: A closed meeting of a group of persons belonging to the same political party or faction usually to elect candidates or to decide on policy.

Ceiling: Prescribed upper limit for possessions—land, income, etc.

Census: An official enumeration of the population of a country and statistics under various classifications. The last census in India was held in February-March 1991.

Central Bank: The apex bank which controls, supervises and guides the functioning of commercial banks in the country. It controls money supply in the economy and has a monopoly of note issue and is also a banker to the Government. In India the Reserve Bank of India is the Central Bank of the country.

Central Processing Unit (CPU): The unit of hardware in a computer system in which all instruction and data processing occur.

Certiorari: It is a writ which orders the removal of a suit from an inferior court to a superior court. It may be used before a trial takes place to prevent an excess or abuse of jurisdiction and to remove the case for trial to a higher court. It is invoked also after trial to quash an order which has been made without jurisdiction or in defiance of the rules of natural justice.

Chauvinism: Exaggerated or aggressive patriotism; excessive or prejudiced support or loyalty for one's cause or group or sex. An oft-used expression is male chauvinism.

Chips: Miniaturised integrated circuits.

Civil Disobedience: Breaking Civil Laws peacefully (non-violently), first preached by Gandhiji (also called non-cooperation) in 1921.

Clearing House: Meeting place for banks for settling mutual claims and accounts.

Closed Economy: Economy which does not have any external economic relationship. It does not export anything nor does it import. Such an economy is largely self-sufficient and hence indulges in no foreign trade.

Coalition: A combination or association of two parties with the purpose of forming a composite government. In times of war, a coalition of the party in power and the opposition is formed to force unity of action.

COBOL: A high-level commercial programming language, which stands for Common Business-Oriented Language.

Code: Common rules and laws (e.g., Indian Penal Code); prevalent morality (code of conduct).

Coding Sheet: A marked paper sheet that helps the programmer writing programming code; it describes an overall instruction format used for writing instruction/statement in Assembly, BASIC, FORTRAN and COBOL languages.

Co-existence: Amicable relations between nations or parties for the maintenance of peace.

Cold War: A conflict, short of actual use of overt military action; hostile preparation, short of physical confrontation.

Collective Security: The doctrine that all nations should collectively ensure safety of an individual nation; the security alliances like NATO, SEATO, CENTO and WARSAW PACT are described as such alliances but in reality they are bastions of aggressive power.

Collectivism: A political or economic theory advocating collective or State ownership especially over production and distribution; a creed of Socialism.

Colonialism: It is the policy of a nation seeking to extend or retain its authority over other peoples or territories.

Colony: A territory permanently settled by people from another land.

Compilation: Process by which program is compiled.

Compiler: A program which translates a source program written in a high-level language into a low-level language. Compile, because more than one machine instructions can be generated from a single source. Compare with assembler, which translates a one-to-one source to object instruction.

Communism: The theory, as expounded by Marx and Engels, aims at the creation of a society in which the private ownership of lands, etc., is abolished and everyone receives what he needs and works according to his capacity. Communists believe that revolution and the use of force are justified to bring about such a society. Two fundamental principles of communism are: peaceful co-existence between countries of different social systems and class struggle between the oppressed and the oppressors.

Condominium: Joint rule over a country by two or more other States. The Sudan was jointly administered by Britain and Egypt from 1899 to 1955.

Confederation: Alliance of countries for specific purposes but the states continue to retain their individual independence.

Constituency: An electoral district and its entire voting population.

Constituent Assembly: A body of senior statesmen elected to frame a constitution for a country.

Constitution: Fundamental laws and rules of the country under which the government functions and which prescribe the rights and duties of its subjects.

Consumer Protection: Laws and means designed to ensure fair trading for buyers.

Contempt of Court: The behaviour that shows contempt for the authority of a court, such as disobeying a court order, breach of an injunction or improper use of legal documents. It is a behaviour that disrupts, prejudices or interferes with court proceedings either inside or outside the courtroom. The court may punish contempt with a fine or imprisonment.

Contraband: Goods whose import, export or possession is forbidden by law; smuggled goods.

Contract of Employment: The legal basis of an agreement between an employer and an employee.

Consul: An official accredited by a state to protect the commercial interests of her nationals in a foreign country.

Convertibility of Currency: It implies freely permitting the conversion of currency of one country to another.

Co-operative Farming: Joint farming by a number of farmers pooling their land and capital resources and sharing the crop in that proportion but retaining ownership rights and the right to withdraw.

Copyright: It is a law applying to literary, musical and artistic works (including plays, recordings, films, photographs, radio and television broadcasts, etc.), which prevents the reproduction of the work, in whole or in part, without the author's consent.

Core Sector: Refers to some selected industries. It was in 1970 that the government had made certain changes in its industrial licensing policy and three sectors, namely, core sector, joint sector and middle sector, were created. Important industries like ship-building, oil exploration, tractors, heavy industrial machinery, etc., were assigned to the core sector.

Corporal Punishment: A physical punishment for wrongdoers, for example, by whipping. It is still used as a punishment for criminals in many countries, especially under the Islamic law.

Corridor: A strip of the territory of one State running through that of another, usually to give access to the sea.

Cosmonaut: A person engaged in or trained for space flights. This term was coined in Russia.

Cost of Living (Index): A figure showing the prevailing cost of living, as compared with a base year taken as 100. This is arrived at by a complicated statistical process and worked out monthly by month, taking each month's prevailing price for all the essential items needed for normal living.

Coup d'etat: Sudden change of government, generally by violent means.

Court Martial: A court convened for the trial of persons subject to military discipline who are accused of violations of military laws.

Credit, letter of: A letter from a bank, firm or from one person to another, authorising payment of a specified sum to third person for which the sender assumes responsibility.

Crossed Cheque: A cheque crossed with two parallel lines and "A Co" written in between them. This is done as a safety measure. The cheque is not to be paid on the counter. The amount is normally to be credited to the payee in his own account.

Curfew: Regulation enjoining withdrawal of persons from the streets or the closing of establishments or places of assembly at a stated hour for a specified duration.

Current Accounts: Bank account from which withdrawals are allowed without any restriction on frequency or amount, so long as there is a credit balance.

Customs Duty: Tax on goods imported into and exported from a country.

Cryogenics: Science dealing with very low temperatures and the study of their physical and technological consequences.

D

Dactylography: Study of finger prints for the purpose of identification.

Database: A collection of data constructed to facilitate the updating once only of the data components, and the access and retrieval of individual items. A database is usually designed in such a way as not to restrict its use to a single application.

Data Flow: A computer assisted method for the recording and analysing of existing or hypothetical systems.

Death Duty (also called Estate Duty): Tax payable on property, after the death of the owner, by his heirs.

Data Processing: Execution of a systematic sequence of operations upon data, e.g. merging, sorting, coding.

Death Rate: The number of deaths per 1000 people in a population per year.

Debenture: Bond issued by an organisation undertaking to repay the amount with a specified interest after a specified period. Debenture holders are only creditors and not shareholders and debentures are held in charge of the organisation.

Decree: Decision or judgement having the force of law.

Deed: Legal document with official seal, duly signed and witnessed and having permanent validity.

(for example, sale deed for immovable property, mortgage deed, etc.).

Deficit Financing: When expenditure exceeds revenue, paper currency is printed to fill the gap. It is beneficial when it creates greater productivity. If there is no adequate increase in productivity, it generates serious inflation and adversely affects real wages—too much money getting too few goods.

Deflation: It is the fall in prices, increase in unemployment, etc., as a result of less circulation of currency in the market.

Democracy: A government of the people, by the people, for the people, where all citizens have equal political rights and voters elect representatives to administer the government.

Demonetization: The Government act of depriving metallic coins or paper money of specified denomination or its status as money. This is resorted to to unearth hidden wealth.

Depreciation: In accounting, this is a percentage (5 to 10 per cent) reduced from the value of machinery or fixed assets for wear and tear every year. In economics, depreciation is fall in money value indicating inflationary conditions and high prices of commodities.

Detente: End of strained relations between two countries.

Detainee: A person taken into custody.

Detonator: A device transmits used to fire a charge of explosive. A mixture of mercury mixed with potassium chlorate or sublimate of silver are the detonating substances.

Devaluation: It is deliberate reduction in the value of home currency in relation to foreign currency.

Developing Countries: A collective term for those countries in Africa, Asia and Latin America which are undergoing the processes of modernisation, industrialisation and progress. These states are included in the Group of 77, whose slogan has now been to "22".

Disaster: A time of distress by an aggravated person or group involving a crisis of or very near the death of a nation or nation against which the death is imminent and not moving from the state of distress and is redressed, until the general crisis of death is controlled.

Disaster Management: For example, Flood, Earthquake, etc. authority, as which

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Dialectical Materialism: A communist doctrine (attributed to Karl Marx) that progress involves three factors—thesis, antithesis, synthesis—represented by the discontent and revolt of the working classes (thesis) against the forces of capitalism (antithesis) and the resulting revolution and establishment of a communist regime (synthesis). The dialectical method of Marx teaches us to understand the process of development in terms of transformation of quantitative into qualitative changes.

Dilehards: People who have extreme conservative and reactionary views, obstructing progress.

Disk: A direct access storage device in which data is recorded on a number of concentric circular tracks on rotational magnetic medium (different from magnetic drum); the required disk and track are selected by electro-mechanical and electronic controls. **Fixed Disk:** a disk store which is permanently on-line. **Exchangeable Disk:** a disk drive whose store (disk packs) can be removed and stored. **Off-line:** a small, flexible disk (floppy disk) used mainly for data capture.

Dividend: Share of the profits allotted to each share in a joint stock company.

Divorce: The legal dissolution of a lawful marriage. It is distinct from an annulment which is a legal declaration that the marriage was invalid.

Dossier: Set or bundle of documents relating to a particular person or happening.

Dumping: An economic measure to stifle competition—selling below cost to get control of the market.

Dynamo: A generator which converts mechanical energy into electrical energy; a forceful energetic person.

Dry Ice: Solid carbon dioxide.

E

Easement Right: The right enjoyed over another's property such as right of way, drawing water, etc.

Economic Holding: A holding which gives reasonable level of incomes to a reasonable size of the family.

Egalitarianism: It is the belief that all citizens in a State should have equal rights and privileges.

Electoral College: A body of electors, limited in number, meeting at one place to choose a public official.

Embargo: Ban on shipping imposed by a country or group of countries as a retaliatory measure against unfriendly countries.

Entente: Friendly relations between countries.

Entrepreneur: An entrepreneur is called the captain of the industry, he bears the risk, he gets the profit and in case of a loss he has to make it up. He is an agent of production that supplies the factor enterprise.

Envoy: A diplomatic official ranking next to Ambassador.

Equity Shares: Ordinary shares which take maximum risk, with no guarantee of dividend but also maximum return when there are high profits (as distinct from debenture shares which have first claim, and preference shares which have second claim on capital).

Espionage: Spying practised by all countries to get vital information on military, scientific and political developments in unfriendly and enemy countries. Also called secret service.

Estate Duty (same as Death Duty): Tax payable by the inheritor on a property over a specified value when the owner dies.

Exchange Rate: It refers to the rate at which the currency of one country exchanges with the currency of another country.

Excise Duty: Tax levied on certain goods produced and consumed in the country (as distinct from customs duty which is levied on goods imported into and exported from the country).

Expenditure Tax: It refers to a direct tax that is imposed by the government on the total expenditure of an individual.

Extensive Farming: It is a system of agriculture in which relatively small amounts of capital or labour investment are applied to relatively large areas of land.

Extradition: Demand made by a country for return of political and criminal fugitives living in a foreign country.

Extra-territoriality: A legal fiction that foreign diplomats and diplomatic agencies are outside the country of residence in spite of physical presence. Embassies, etc., form foreign islands, so to speak, within the territory of a State. They are not subject to its laws.

F

Fascism: Italian political creed developed by Mussolini in which the State represented by one man is supreme and the individual has no rights apart from what the Fascist dictator may allow.

Federalism: A system of government in which several autonomous States join and surrender some important powers (such as defence, foreign relations, etc.) to a central authority for common good.

Federation: A system of government in which several States or provinces of a State hand over

certain powers (such as foreign policy, defence, tariff) to a central government, while controlling some part of their internal affairs.

Fifth Column: A term of abuse for traitors (derived from the name applied to rebel sympathisers in Madrid, Spain, in 1936 when four columns were advancing on the city).

Filibuster: To carry out insurrectionist or revolutionary activities in a foreign country. The term is also used for extreme dilatory tactics in an attempt to delay or prevent action especially in a legislative assembly.

Fiscal Deficit: It is sum of budgetary deficit and net increase in internal and external borrowings.

Fiscal Policy: It is that part of government policy devoted to achieving the desired level of revenue through taxation and declining the priorities and purposes of governing expenditure.

Flag Day: Observed in a country to celebrate the anniversary of a particular day. In India, Flag Day is celebrated on December 7 as a mark of gratitude to India's servicemen. Funds are collected for the cause of the defence personnel and each contributor is given a small flag. In some countries, it is also called tag day.

Floor Crossing: Defection—members changing parties for personal ends in the legislature—generally considered derogatory.

Floppy Disk: A device for storing and retrieving data.

Flow Chart: In computer terminology, it refers to graphical representation of a sequence in a computer program.

FORTRAN: Formula Translating System. A high-level programming language that closely resembles the algebraic notation of formulae. Primarily for use by engineers and scientists.

Four Freedoms: First propagated by U.S. President Roosevelt: freedom of speech, freedom of worship, freedom from want and freedom from fear.

Fourth Estate: The Press (for its power to mould public opinion for or against the existing government).

Franchise: Right to vote in parliamentary elections.

Freedom of the Press: The right to publish newspapers, magazines and other printed matter without governmental restriction and subject only to the laws of libel, obscenity, sedition etc. In India, this freedom is implied in the wider freedom of expression guaranteed under Article 19(1) of the Constitution.

Freelance: The term applied to a mercenary soldier, i.e. one who fought under any leader who

hired him and not because of love for a country. This term is now used for a politician unattached to any party or for a journalist, photographer etc., who does not work for any one paper or organisation. He earns his living by selling his services.

Free Port: A place where there are no duties payable on commercial goods. This is done to encourage tourism.

Fundamental Rights: Basic rights of an individual in a civilised country. In India, these are listed in the Constitution.

G

Gamma Rays: Short-wave electromagnetic radiations similar to light and X-rays. The penetrating power of these rays is extremely high, even greater than X-rays. They can penetrate through 6 inch-thick steel. Gamma rays are not deflected by strong electric or magnetic field. However, these are harmful to living tissues.

Genocide: Wilful extermination of a racial, ethnic, religious or a political group. This has been made an international crime by a UN Convention of 1948. Genocide was systematically practised by the Nazi regime in Germany and the Yahya regime in Bangladesh. Millions of men were done to death by various means.

Gentleman's Agreement: An informal unwritten agreement based on good faith.

Genueflect: To bend the knee in worship or respect.

Gherao: Illegal confinement of persons in authority by agitating workers.

Gift Tax: Tax on gifts to prevent tax evasion by genuine or fictitious gifts.

Go to Statement: The unconditional branching statement in BASIC, FORTRAN, COBOL, PASCAL, etc. languages.

Good Offices: Mediation efforts by a third country between two belligerents.

Green Belt: It is an area of parks or unoccupied ground, usually around the outskirts of a town or city, where building and other developments are not permissible by legislation. The purpose of such legislation is to preserve open space and relatively rural environments. This term is also used in the game of judo. A green belt is conferred by a judo association on a player, usually in his second year of training, to be worn with his judo costume.

Green Revolution: Adoption of new methods of agriculture with high yielding hybrid seeds, fertilisers, pesticides and intensive cultivation, to increase agricultural production.

Gross National Product: It is the total monetary value of all final goods and services produced in a country during one year.

Group of 77: Launched in 1964 by the developing countries, its strength has now risen to 122 nations.

Guerilla War: Irregular war waged by independent groups.

Gunboat Diplomacy: This is a phenomenon of international behaviour characterized by a big power using coercion and armed might to overawe or threaten a small power into submission. Literally speaking, it means extracting an advantage from a nation by stationing gunboats off its sea coast.

H

Habeas Corpus: Act of British Parliament passed in 1779. Under the Act, if a person is kept in prison without trial, the courts are empowered to issue a writ to the jailor to produce the person and bring him for proper trial. It also provides facilities to the prisoner for a speedy trial and release on bail.

Hard Copy: 1. A legible copy in conventional characters. 2. A printed copy of machine output, e.g. printed reports, listings, documents, etc.

Hard Currency: Foreign exchange which is difficult to get (U.S. dollars for India).

Hartal: A symbol of protest to give expression to a grievance by closing all local business and sometimes transport; usually voluntary.

Hierarchy: A body of people functioning in a series of graded ranks.

Hijacking: Illegal diversion of an aeroplane by one or more persons threatening the crew at the point of a gun or other lethal weapon.

Hot Line: A direct exclusive line of communication, esp. for emergencies. This existed in a big way between U.S.A. and then USSR during the tense days of the cold war.

High Commissioner: An ambassador of a Commonwealth country in another Commonwealth country.

Homo Guards: A voluntary force for home defence organised in India in 1960 and helping in emergencies (fire fighting etc.).

Horse Power: It is a unit of work or power exerted by machine and is equivalent to the force required to raise 550 foot pounds per second.

Hybrid Computer: A type of computer that combines the best features of analog and digital computers.

I

Igloo: A dome-shaped house or a hut, built of blocks of hard snow, in which Eskimos live.

Ikebana: It is a flower arrangement style, popular in Japan.

Impeachment: Prosecution by legislators of a very high public official (President, Chief Justice) for serious offences against the Constitution.

Imperialism: The policy of empire building and conquests transcending natural frontiers. It now means every policy of conquest and colonial expansion. Since the First World War, imperialism has more frequently taken the form of economic penetration than of political domination.

In Camera: An enquiry held in the private room of the judge so that its proceedings are kept secret.

Index Number: Comparative monthly figure showing prevailing cost of living, production, sales, prices, etc., as compared to a base year.

Indexed Sequential (ISAM) File: A type of direct access media file that combines random and sequential access of data in the file through an index.

Industrialisation: It is the process of introducing industry into an area on a large scale as the dominant sector of a national economy.

Industrial Revolution: The totality of the changes in economic and social organisations that began about 1760 AD in England and later in other countries. It was characterised by the replacement of hand tools with power-driven machines, as the power loom and the steam engine, and by the concentration of industry in large establishments.

Inflation: Undue increase in quantity of money in proportion to purchasing power as an excessive issue of fiduciary money. To check inflation the government resorts to reduction in money supply.

Injunction: Judicial restraint order to prevent a wrongful act.

Intensive Farming: It is a system of agriculture in which relatively large amounts of capital and labour investments are applied to relatively small areas of land.

International Date Line: It is a modification of the 180° meridian that marks the difference in time between East and West. The date is put forward a day when crossing the line going West and back a day when going East. The International Date Line was chosen at the International Meridian Conference in 1884.

International Law: Rules governing the relations between civilised countries, administered by the International Court of Justice, and dealing with such important matters as treatment of war prisoners and the wounded, contraband trade, blockade, etc.

Interpol: International Police Organisation to track and apprehend criminals operating internationally and evading arrest.

Interpolation: Insertion; unfair insertion, to fill in as an intermediate term of a series.

Inventory Control: It refers to the control exercised by a producing firm over the maintenance of adequate raw materials and finished goods. It is also called stock control.

Iron Curtain: A barrier created by such means is censorship and prohibition of free travel to isolate Russian-controlled territories from outside contacts; hence any similar barrier against communication.

J

Jettisoning: Cargo thrown away into the sea to lighten the ship in times of danger.

Job Analysis: It refers to the in-depth study of a particular job or task. This type of analysis helps in effecting improvement and raising efficiency.

Joint Council: A small body consisting of members from the management and representatives of labour in industrial undertakings to discuss, advise and make settlements of labour-related problems.

Joint Sector: It refers to a sector which is jointly owned, managed and run by both public and private sectors. It is a partnership between the two sectors.

Joint Stock Companies: These are companies which are legally incorporated under the Indian Companies Act. They are of two types—Private and Public.

Jury: A body of persons from ordinary life selected to give their verdict in important cases from facts and evidence placed before the court. To ensure that they are not influenced by others, they are not permitted outside contact till the case is heard and their verdict is given.

K

Kharif Crops: These are raised in autumn as a result of the sowing made in June. Rice, millets, maize and cotton are kharif crops.

Khedda: Trapping and taming operations against wild elephants in Karnataka State.

Kuomintang: Nationalist Party of Taiwan, i.e., Formosa.

L

Lame Duck: Members of a legislature who fail to get re-elected but continue to function as legislators until the new legislature meets. The term was used in the U.S.A.

Large scale integration (LSI): It is a process of creating high density integrated chips usually thousand gates on a chip.

Lease: It refers to an agreement between the lessor and the lessee. In this agreement the owner of the property gives permission to the other party to use the property on payment of a fixed rent. Rent can be paid monthly, half-yearly or yearly.

Leftist: A term applied to socialists and communists to connote liberal and progressive ideas in politics.

Legal Tender: Money in accepted form which a creditor cannot refuse to accept in payment of a debt.

Legation: A diplomatic mission lower in status than an embassy.

Lend-Lease: The system of lending and leasing supplies and installations to each other, developed among the Allies in the Second World War by U.S. President Roosevelt.

Liberalism: Political policy advocating free trade, religious liberty and extension of franchise.

Limited Company: A registered trading body in which the liability of the members (shareholders) is limited to their share capital (in shares).

Lobbying: Influencing other legislators by persuasion and pressure for their support in important legislative matters.

Local Area Network (LAN): A relatively inexpensive, simple communication system linking a number of computers within a defined small (university, industrial site, office building, etc.) locality.

Lockout: Closure of a factory by employers when there is a labour dispute and fear of damage to machinery and property.

Lok Pal: A person who is, or has been, qualified to be a judge of the Supreme Court and appointed by the President of India to enquire into allegations of corruption against the Union/State Ministers.

M

Magnetic Disk: A current storage media which lets the computer retain large amounts of data/program for ready processing (see also direct access media).

Magnetic Tape: A magnetic storage medium. Magnetic tape is usually 1/2 inch wide and is a plastic tape coated with a magnetic oxide surface. Data is recorded on the tape in frames with each frame holding a character. Magnetic tape is essentially a serial storage medium.

Malnutrition: It is the condition of inadequate or unbalanced nutrition. The diet of a malnourished person may be high in starchy foods but is

invariably low in protein, essential minerals and vitamins. Malnutrition gives rise to numerous ailments.

Management Information System (MIS): A computer system that integrates equipment, procedures and organisational personnel to develop information for management decision making.

Mandamus: It is an order of the Supreme Court or a High Court commanding a person or a body to do that which is his duty to do. This writ is issued so that the aggrieved person can get his right fulfilled.

Mandate: Command from superior officer or judge to an inferior; right given to a person to act in the name of another; power conferred upon a state by the erstwhile League of Nations to govern a region elsewhere.

Manifesto: A written public declaration of the intentions, opinions or motives of sovereign or of a leader, party or body.

Marxism: The socialist doctrine based on the theories of Karl Marx. His ideas are that all wealth is produced by labour and should go to it. Since the labour is deprived of its fruits by capitalists, the workers must prepare for class war in which capitalism will be destroyed.

McMahon Line: The India-China border line drawn in 1914 at a British-Tibetan-Chinese conference and named after a British administrator. China, having absorbed Tibet, does not recognise the line while India insists on its legitimacy as a border-line.

Matriarchy: A form of social organisation in which mother is the head of the family and in which descendant is reckoned in the female line.

May Day: First day of May every year celebrated as Workers' Day with the slogan "workers of the world unite".

Mediation: Friendly intervention of third person, party or country to promote reconciliation between belligerents.

Megabyte: The term used to represent 1 million (10^6) bytes of storage.

Mendelian Law: The principle of hybridisation, discovered by Gregor Mendel, an Austrian monk, which led to improved breeds of plant and animal life.

Microcomputer: A computer system which is being fabricated around micro-processor.

Mid-term Poll: Election held before time as a result of dissolution of legislature before the end of its term.

Migration: It is an act or process of going from one country, region or place of abode to settle in another. This term is used not only for

human beings but also for birds, fishes and animals. Students also migrate from one college or university to another, which means changing the place of learning.

Militancy: Reliance on force and violent methods.

Mixed Economy: An economic system where public and private sectors exist side by side.

Modem: A device that converts data into impulses and transmits them over telephone lines from the terminal to the computer and vice versa.

Monarchy: A system of government in which sovereign power vests with a single person, who may be a king, a queen, a monarch, etc. He is the source of all executive and legislative powers.

Monetary Policy: The policy of the central bank of the country with respect to supply of money and the rate of interest. It involves an attempt by the central bank to influence the level of economic activity (investment, income, output and prices) through changing the supply of money and the rate of interest.

Money Bill: Finance bill introduced in legislature (budget, etc.).

Moratorium: A legally or officially determined period during which no business engagements are completed or debt or liabilities enforced. It is declared by a government during a financial crisis.

Motel: A drive-in hotel for touring motorists providing all hotel facilities and garage accommodation for vehicles.

Multiprocessing: The simultaneous execution of two or more instructions employing two or more CPUs.

Mystery Play: A medieval dramatic form based on a Biblical story, usually dealing with the life, death and resurrection of Christ.

N

National Anthem: National song recognised throughout the country and officially sung and played on all ceremonial occasions—official, cultural and international.

Nationalisation: Government take-over of business, industrial or public utility services.

Nationalism: A doctrine that the nation (country) is paramount. In an extreme form it leads to dictatorship, normally equated with patriotism.

Naturalisation: Citizenship granted to an alien for permanent stay in a country if he conforms to the requirements.

Nazism: National socialist ideology propagated by Adolf Hitler.

Need-based Wages: Wages calculated on the needs of the workers as distinct from

considerations of labour availability, productivity and profitability.

Negotiable Instrument: It refers to the bill of exchange or promissory note payable either on demand or on the expiry of the given period.

Neo-colonialism: It is the policy of a strong nation in seeking political and economic hegemony over an independent nation or extended geographical area without necessarily reducing the subordinate nation or area to the legal status of a colony.

Net National Product: It is the gross national product minus allowance for depreciation of capital goods.

Neutrality: Strict aloofness and impartiality towards ideologically antagonistic or warring nations.

Non-aggression Pact: Agreement not to wage war against each other and to go to each other's help against enemy aggression.

Notary Public: He is an officer publicly authorised to certify deeds and other documents. He authenticates documents and takes affidavits, depositions, etc.

O

Octroi: It is a tax charged by the municipality or local body on the goods and commodities brought into town. It is an important source of revenue for the municipal authorities.

Oligarchy: Government by a small exclusive class; a State so governed; a small body of men who have the supreme power of a State in their hands.

Ombudsman: A vigilance officer with wide powers, to help and protect the individual (common man) against official oppression. This is a Swedish institution.

Open Economy: Economy that has trade relationships with other countries. It exports and imports commodities as a normal point of its activity.

Ordinance: An urgent measure promulgated by a Head of State on his own authority to meet emergency conditions, usually limited in duration.

Ostpolitik: An attempt of friendly relations between West Germany and East Germany and removing the cold war atmosphere.

Ottoman Empire: It is the name of the Turkish empire which lasted from 12th to the 20th century.

P

Panch Sheel: The five principles of peaceful co-existence (1) mutual respect for each other's territorial integrity and sovereignty; (2) non-

aggression; (3) non-interference in each other's internal affairs; (4) mutual benefits; (5) peaceful co-existence, jointly agreed to and proclaimed by the late Indian Prime Minister Jawaharlal Nehru and the late Chinese Prime Minister Chou En-lai in 1954. It became defunct in the wake of Chinese aggression.

Paper Gold: It is the special drawing right given to member countries of the International Monetary Fund in proportion to their quota in the Fund so that the expanding world trade can be financed on international faith and cooperation. It is international money which exists on the books of IMF and changes hands through books only.

Parallel Port: A point of connection where a input or output device can be connected to attain parallel transmission. Thus, a parallel port allows data transmission in the format in which all the bits associated with a unit of data (e.g. any alphanumeric character) are transmitted at the same instant using different (parallel) paths. For example, in case we have a 8 bit representation of characters, then the parallel port will have parallel paths.

Paramountcy: Overall supreme authority of the British over princely states in India which lapsed with Indian Independence in 1947.

Pen-down Strike: A form of strike in which office workers report for duty but do not carry out the work.

Pentagon: A U.S. Government building which houses the Defence Department.

Per Capita Income: It is the average income of an individual wage-earner in a country in one year.

Peripherals: The devices which are external to central processing unit of computer but can be controlled by the computer. Peripherals include input-output and backing store devices.

Persona non grata: Diplomatic envoy who is not acceptable to the host country (unwelcome person).

Personality Cult: An ironic political term for hero worship (usually there may be nothing sacred about the "hero"). It helps the leader with a following to become more and more important.

PERT (Project Evaluation and Review Technique): A system for planning and progressing time, resource and the cost of projects by linking activities with the executive.

Pillars of the Faith: The duties and religious observances of a Muslim; in; local also called Pillars of Islam.

Plenipotentiary: A person with discretionary powers; an

deputed by his sovereign to act at his own discretion.

Plebiscite: A vote by which the people of an entire country or district express an opinion for or against a proposal especially on a choice of government or ruler.

Plutocracy: A government by wealthy people.

Point of Order: Questioning a proceeding as not according to rule.

Polarisation: In science, separation of positive and negative charges; in politics, several parties merging with other like-minded parties and forming two mutually opposing forces.

Population Pyramid: It is a graph showing the distribution of population by sex, age, etc., of a given region or nation.

Power Politics: Activities to get all power in one's hands to the exclusion of worthy objects like welfare of the masses, prosperity of the country, etc.

Preamble: The introductory part of the constitution of a country. Introductory statement.

Prerogative: Exclusive right or privilege.

Primary Sector: It is the sector of the national economy which deals with the production of primary or raw materials, i.e., agriculture, mining, forestry, fishing, etc.

Privilege Motion: It is moved by a legislator to question a breach of any member's or the House's privilege.

Programming Language: A high level language designed for precise description of computer programs with formal definition of statements.

Prohibition: It is a writ issued primarily to prevent an inferior court from exceeding its jurisdiction, or acting contrary to the rules of natural justice. This term is also used for a ban on sale and consumption of alcoholic drinks.

Protocol: Diplomatic etiquette between two countries.

Public Sector: Undertakings financed and operated by a government.

Q

Quarantine: The period of compulsory isolation or detention enforced against travellers not in possession or required health certificates to prevent the possible spread of contagious diseases (also against ships suspected of carrying contagion).

Quisling: Traitor to his country, treated as a fifth columnist. The term has come into usage after the name of Vidkun Quisling, a Norwegian who collaborated with Germany against his motherland.

Quorum: The fixed minimum number of members whose presence is essential to transact official business of legal validity in an appointed meeting, assembly or conference.

Quo Warranto: It is an order from the Supreme Court or a High Court to restrain a person from acting in an office to which he is not entitled. It may also seek the office to be declared as vacant.

R

Rabi Crops: These are sown in October and November and reaped in April. Wheat, gram, linseed and mustard are rabi crops.

Random Access Memory (RAM): Main memory of the computer that is fabricated on a semiconductor chip. Information can be read from and written to the memory by the user and, therefore, it is also called read/write memory.

Rationalisation: Reorganisation of an enterprise on a rational basis.

Recession: It is a phase in trade cycle which brings a fall with lesser intensity and lasts for a shorter period. Other phases of trade cycle are boom and depression.

Red Guards: The youth volunteers who spearheaded the cultural revolution under Mao in Red China.

Red Indian: A member of the aboriginal races of American or any of the aboriginal North and South American stock usually excluding the Eskimos. Also called American Indian.

Red Tape: The term connotes official formalities which spell inevitable delays.

Referendum: Reference of an issue directly to the public (electorate) for obtaining a majority decision.

Reparation: Compensation to be paid by a vanquished nation to a victor country.

Repatriation: Returning of an individual to his home country or in the case of a prisoner of war to his parent army.

Republic: A sovereign country whose Head of State is not a monarch or king.

Read Only Memory (ROM): Main memory of the computer that is fabricated on as the random access memory but the contents of the main memory are fixed during manufacturing and cannot be modified i.e. only the contents can be accessed.

Rule of Law: It implies that an individual can be arrested or punished by the government only by the due process of law and that every citizen will have access to the judiciary to vindicate his legal grievances, if any.

Rural Bank: These banks which function differently from the commercial banks have been set up in rural areas to meet the credit needs of small farmers, rural artisans, small traders, etc. These banks are an alternative source of credit to the weaker sections of the rural regions.

S

Sabotage: Deliberate destruction of equipment by discontented employees or by enemy agents.

Sanction: An imposition corresponding to a penalty or award passed on defaulting nation. For example, the UN had passed certain sanctions against South Africa for its apartheid policy before 1994.

Schizophrenia: A mental disorder which can lead to profound changes in personality and behaviour, including paranoia and hallucinations. It is marked by withdrawn, bizarre and sometimes delusional behaviour and by intellectual and emotional deterioration.

Scrolling: Using the video as a text window to see the text. The scanning can be done either horizontally or vertically.

Secondary/Auxiliary Storage Device: A permanent storage device having a large capacity at slower access time than main memory. For example, hard disk, floppy disk, magnetic tape, etc.

Secondary Sector: It is the sector of the national economy which comprises manufacturing and processing industries.

Secular State: A state which treats all its citizens alike irrespective of their religious faith.

Security: A guarantee in the form of cash, bonds, property, etc., kept as pledge for repayment of debt or protection against financial loss.

Self-determination: The right of a national group or country to determine the question of its independence and form of its own government. Self-determination is in contrast to colonial rule.

Seller's Market: A market where goods and services are scarce and the prices are relatively high.

Sick Industry: An industry which fails to generate internal surplus on a continuing basis.

Silicon: The material which provides the base for solid state microelectronic component. It is purified sand. It is the raw material for integrated circuits.

Simulation: Investigation of the behaviour of a system by establishing and running a model of it.

Sit-down Strike: A form of strike in which the workers report for duty but do not carry on with the work.

Socialism: A political and economic theory which advocates that all key industries, commerce and important national services like health and education should be under state control.

Soft Loan: It is a form of loan given either at a low rate of interest or without any interest. These are given to accelerate the pace of economic development of the developing countries.

Speculation: It refers to the anticipation of price changes involving buying and selling of goods over a given period of time. A speculator buys or sells with a view to sell at a later time when the price rises or a part of it he may sell with a hope of buying the same at a later date.

Stagflation: A term used for describing a situation where inflationary rise in prices and stagnation in economic activity exist together.

Stalemate: Deadlock in a meeting or conference which hampers successful conclusion of an outcome.

Sterling Area: Nations which keep their exchange reserves in London in British sterling instead of gold. Such nations are generally members of the Commonwealth.

Subroutine: Also known as subprogram. It is a unit of program which is a program in its own right and can be compiled, but cannot be executed without the main program.

Summit Conference: The meeting of heads of different states for a common purpose. The heads could be either Prime Ministers or Presidents, depending on the case may be.

Super Tax: A special tax levied over and above the normal income tax on an income exceeding a certain limit.

Surety: An undertaking given by a person who makes himself responsible for the good conduct of another for his appearance in a court, payment of a debt, etc.

T

Tertiary Sector: It is the sector of the national economy which provides services such as transport, finance, retailing, etc.

Third World: This term is used for the developing countries. From the international economic point of view, the world is divided into three parts. The first is the Western bloc of countries which is led by the United States, Great Britain, Germany, Japan, etc., which are rich and industrialised nations. The second is the Communist bloc of nations led by the Soviet Union, including the East European nations. The third is among the Third World nations, which is the third part.

38th Parallel: A line of demarcation running along the 38th latitude (N) dividing North Korea from South Korea.

Trusteeship: The UN has made arrangement that certain underdeveloped countries should be looked after and governed by some trustee nations. Their period of trusteeship has been fixed and after that the territories held will be given the right of self-determination. Under the League of Nations, this system was known as the mandate system.

Trade Mark: It is a distinctive mark or sign or name adopted in respect of a product and registered as such in order to safeguard the interests and rights of manufacturers. A trade mark cannot be infringed by any one under the laws.

Turnover: The total value of the sales made by a company or a firm in one accounting year is called the turnover.

U

Urban Ceiling: It is a ceiling imposed by a government on urban people limiting their property beyond which they cannot hold.

Ultimatum: Final terms offered by one party to another before it decides on a unilateral course of action.

Underground: Organised secret residence movement against a government or force in power

Unitary State: A country in which all authority rests with the central government. The federating units or local governments come under the overall jurisdiction of the centre.

V

Vatican: An assemblage of buildings on the Vatican Hill in Rome; the Papal authority.

VGA (Video Graphics Array): A powerful screen display adapter having resolution around 640 x 350 and can display 256 colours.

Virtual Memory: A store management system in which a user uses the storage resources of the computer without being constrained by the limited size of mainstore.

Visa: It is an endorsement on the passport permitting its holder to enter a foreign country. It has to be obtained from the embassy of the country to be visited.

Vote on Account: A procedure authorising expenditure in respect of demands for grants pending the passing of the Appropriation Act.

W

Wealth Tax: A tax imposed on the wealth possessed by individuals in a country. The object of this tax is to avoid concentration of wealth in a few hands.

Welfare State: A state that by its concern for public health, insurance against sickness, unemployment and similar measures, assumes a large share of responsibility for people's welfare.

Whip: This term used in a legislature refers to a party official nominated to enforce discipline among members of that particular party at the time of voting.

White Paper: A document published by government giving complete information to the public and the members of the Parliament on matters of national importance.

Wide Area Network (WAN): A network covering a wide geographical area.

Will: A legal document by which a person disposes of his assets on death.

X

X-rays: A form of electromagnetic radiation similar to light but of shorter wavelength and capable of penetrating solids and of ionising gases. These are produced when cathode rays fall on the anti-cathode (a metal of high atomic weight like tungsten).

Y

Young Turk: This originally referred to the followers of the Young Turk Reform Party in Turkey. This term now refers to the extreme left elements in the ruling party in a country.

Z

Zero-Based Budgeting: It is a system of budgeting which involves a fresh evaluation of every item of expenditure. It seeks to undertake a comprehensive analysis of every scheme, project or programme, whether old or new, in its entirety. It is presumed as if zero expenditure has been made even on an old on-going project at the time of review and insists on providing fresh justification for the project as a whole in the light of social priorities.

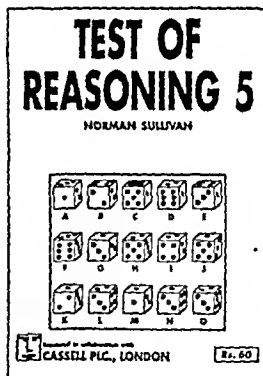
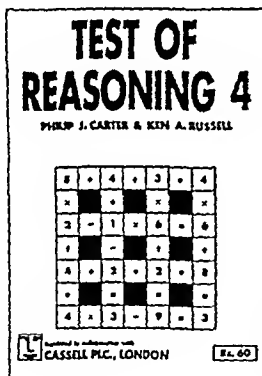
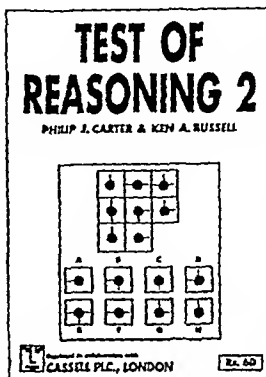
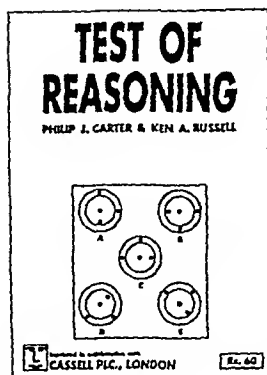
Zionism: The world movement of Jews. It was started towards the end of the nineteenth century with the aim of finding a home state for the Jews in the world. It culminated in the establishment of Israel in 1948.

Part IX

Sports And Games

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1. Major Sports And The Terms Associated With Them

Badminton: Deuce, Double Fault, Drop, Let, All, Smash.

Basketball: Ball, Basket, Blocking, Dribbling, Throw, Held Ball, Holding, Jump Ball, Multiple Rebounds, Pivot.

Baseball: Base, Battery, Bunting, Catcher, Pitcher, Hitter, Home, Infield, Outfield, Pinch Hitter, Plate, Pullout, Short Stop, Strike.

Billiards: Bank Line, Break, Bolting, Cannon, Hazard, In-off, Jigger, Long Jenney, Pot, Scratch, Screw Back, Short Jenney, Spot Stroke. **Boxing:** Auxiliary Point System, Rabbit Punch, Cut, Defence, Down, Hook, Jab, Lying On, Knock, Seconds Out, Slam, Upper Cut, Weight In, Knock-Out.

Bridge: Chicane, Dealer, Dummy, Finesse, Slam, Little Slam, No Trump, Revoke, Over, Ruff, Suit, Tricks, Vulnerable.

Chess: Bishop, Castle, Checkmate, Gambit, Knight, Pawn, Queen, Rook, Stalemate.

Cricket: Ashes, Boundary, Bowling, Caught, Run Out, Cover Drive, Crease, Duck, Follow on, Leg, Gully, Hat-trick, Hit Wicket, L.b.w., Leg-Bye, Maiden Over, No Ball, Off Break, Drive, Out, Over, Mandatory Over, Pitch, Running Crease, Rubber, Run Down, Run Out, Silly Point, Square Leg, Stone Walling, Light drive, Stumped, Yorker, Wicket.

Croquet: Hoops, Mallet, Peg Out.

Draughts: Huff.

Football: Corner Kick, Direct Free Kick, Dribble, Goal Kick, Hat-trick, Off Side, Penalty Kick, Throw In, Tripping.

Golf: Best-ball Foursome, Bogey, Bunker, Caddie, Dormy, Fairway, Fourball, Foursome, Greed Holes, Links, Niblic, Par, Put, Rough, Stymied, Tee, Threesome.

Hockey: Bully, Carry, Corner, Dribble, Hat-trick, Off-side, Roll-in, Scoop, Short Corner, Slick, Striking Circle, Tie-breaker.

Horse Racing: Jockey, Punter, Steeplechase.

Polo: Bunker, Chukker, Mallet.

Rowing: Bow, Bucket, Cow, Ergometer, Feather, Paddle, Regatta.

Rugby Football: A Tackle, Lines, Scrum, Touch, Try.

Shooting: Bag, Bull's Eye, Marksmanship, Muzzle, Plug.

Skiing: Tobogganing

Swimming: Breast Stroke, Crawl.

Tennis: Backhand Stroke, Deuce, Double Fault, Fault, Ground Stroke, Half Volley, Let, Love, Smash, Volley.

Volleyball: Blocking, Doubling, Heave, Holding, Love All, Point, Service, Volley.

Wrestling: Hat Nelson, Head Lock, Heave, Hold, Reboots, Scissor.

2. Sports Measurements

Badminton: 44 ft by 20 ft (doubles); 44 ft by 17 ft (singles).

Baseball: Diamond shaped ground; 90 ft on each side and 127 ft along the diagonals.

Billiards: 10 ft long, 5 ft side and 3 ft high.

Basketball: 85 ft. by 46 ft. (maximum dimensions).

Cricket: Ground: Round or oval shaped; Stumps: 22 yds apart; Ball: 8¹/₂ to 9 inches in circumference and 5¹/₄ oz. in weight; Bat: 4¹/₂ inches maximum width and 38 inches maximum length; Bowling crease: 8 ft and 8 inches in length; Running crease: 4 ft from the wicket and deemed unlimited in length; Stumps: 27 inches out of the ground.

Derby Course: 1¹/₂ miles (2.4 km).

Football: Length 100 yds. to 130 yds; Breadth 75 yds to 56 yds; Goal width 8 yds., bar 8 ft.

from ground; Area 6 yds., from each goal-post; Ball 27 inches to 28 inches in circumference; Duration: 90 minutes maximum.

Golf: Hole 4¹/₂ inches, ball 1¹/₂ oz. in weight.

Hockey: Ground 100 yds by 55 to 60 yds; Duration of game: two periods of 30 minutes each plus extra time in case of draw or suspension of game for some reason; Goal perpendicular poles 2 yds apart joined together by a horizontal cross bar 7 ft from ground; Ball: 8¹/₂ inches circumference; Weight of the ball: 5¹/₄ oz.

Polo: Ground: 300 yds by 200 yds.

Marathon Race: 26 miles, 325 yards.

Table Tennis: 9 ft x 6 ft x 2¹/₂ ft.

Tennis Court: 78 ft by 28 ft (singles), 78 ft by 36 ft (doubles).

Volleyball Court: Rectangular 30 ft by 30 ft.

Water Polo: 30 yds x 20 yds.

3. Cups And Trophies (Associated with Sports and Games)

Archery: Federation Cup.

Athletics: Charminar Trophy, Federation Cup, World Cup.

Air Racing: Jawaharlal Challenge Trophy, King's Cup, Schneider Cup (sea planes race in UK).

Badminton: Agarwal Cup, Amrit Diwan Cup, Australasia Cup, Chadha Cup, European Cup, Hariela Cup, Konica Cup, Ibrahim Rahmatollah Challenge Cup, Narang Cup, Sophia Kilakara Cup, Konica Cup, S. R. Rula Cup, Thomas Cup, Tunku Abdul Rahman Cup, Uber Cup, World Cup, Yonex Cup.

Basketball: Basalat Jha Trophy, B.C. Gupta Trophy, Federation Cup, S.M. Arjuna Raja Trophy, Todd Memorial Trophy, William Jones Cup.

Billiards: Arthur Walker Trophy.

Boat Rowing: American Cup (Yacht racing), Wellington Trophy (India).

Bridge: Basalat Jha Trophy, Holkar Trophy, Rula Gold Cup, Singhania Trophy.

Chess: Naldu Trophy, Khaitan Trophy, Limca Trophy, World Cup.

Cricket: Anthony D'Mellow Trophy, Ashes, Asia Cup, Benson and Hedges Cup, Bose Trophy, Champions Trophy, Charminar Challenge Cup, C.K. Nayudu Trophy, Cooch-Bihar Trophy, Copa America Trophy, Deodhar Trophy, Duleep Trophy, Gavaskar-Border Trophy, G.D. Birla Trophy, Gillette Cup, Ghulam Ahmad Trophy, Hakumat Rai Trophy, Interface Cup, Irani Trophy, Jawaharlal Nehru Cup, Lombard World Challenge Cup, McDowell's Challenge Cup, Merchant Trophy, Moin-ud-Dowla Cup, Natwest Trophy, Prudential Cup (World Cup), Rani Jhansi Trophy, Ranji Trophy, Rohinton Baria Trophy, Rothmans Cup, Sahara Cup, Sharjah Cup, Sheesh Mahal Trophy, Sheffield Shield, Singer Cup, Texaco Cup, Titan Cup, Vijay Hazare Trophy, Vijay Merchant Trophy, Vizzy Trophy, Wisden Trophy, Wills Trophy, World Series Cup.

Football: African Nations Cup, Airlines Cup, America Cup, Asia Cup, Asian Women's Cup, Bandodkar Trophy, B.C. Roy Trophy, Begum Hazrat Mahal Cup, Bicentennial Gold Cup, BILT Cup, Bordoloi Trophy, Colombo Cup, DCM Cup, Winner's Cup, Durand Cup, European Cup, FA Cup, Federation Cup, G.V. Raja Memorial Trophy,

Gold Cup, Governor's Cup, Great Wall Cup, IFA Shield, Independence Day Cup, Indira Gandhi Trophy, Jawaharlal Nehru Gold Cup, Jules Rimet Trophy, Kalinga Cup, Kings Cup, Lal Bahadur Shastri Trophy, McDowell Cup, Merdeka Cup, Nagjee Trophy, Naldunia Trophy, Nations Cup, Nehru Gold Cup, Nizam Gold Cup, Raghbir Singh Memorial Cup, Rajiv Gandhi Trophy, Rovers Cup, Sanjay Gold Cup, Santosh Trophy, Scissors Cup, Sir Ashutosh Mukherjee Trophy, Stafford Cup, Subroto Cup, Todd Memorial Trophy, UEFA Cup, US Cup, Vitthal Trophy, World Cup.

Golf: Canada Cup, Eisenhower Trophy, Muthiah Gold Cup, Nomura Trophy, Paralambi Trophy, Prince of Wales Cup, Ryder Cup, Topolino Trophy, Walker Cup.

Hockey: Agha Khan Cup, Alwyn Asia Cup, Azlan Shah Cup, Beighton Cup, Bhim Salin Trophy, BMW Trophy, Bombay Gold Cup, Champions Trophy, Clarke Trophy, Dhyan Chand Trophy, Esanda Champions Cup, European Nations Cup, Gurmeel Trophy, Guru Nanak Cup, Gyanvati Devi Trophy, Indira Gandhi Gold Cup, Intercontinental Cup, Khan Abdul Gaffar Khan Cup, Kuppaswamy Naidu Cup, Lady Rattan Tala Cup (women), Lal Bahadur Shastri Cup, Maharaja Ranjit Singh Gold Cup, Modi Gold Cup, Murugappa Gold Cup, Nehru Trophy, Obaidullah Gold Cup, Rangaswami Cup, Ranjit Singh Gold Cup, Rene Frank Trophy, Sanjay Gandhi Trophy, Scindia Gold Cup, Shriram Trophy, Tunku Abdul Razak Cup, Wellington Cup, World Cup, Yadavindra Cup.

Horse Racing: Blue Riband, Derby, Grand National Cup.

Kabaddi: Federation Cup.

Kho-Kho: Federation Cup.

Netball: Anant Rao Pawar Trophy.

Polo: Ezar Cup, Prithi Singh Cup, Radha Mohan Cup, Winchester Cup.

Shooting: North Wales Cup, Welsh Grand Prix.

Table Tennis: Asian Cup, Berna Bellack Cup, Corbillion Cup (women), Electra Gold Cup, Gasper-Giest Prize, Grand Prix, Jayalaxmi Cup (women), Kamala Ramanujan Cup, Pithapuram Cup (men), Swaythling Cup (men), Travancore Cup (women), U Thant Cup, World Cup.

Tennis: Ambre Solalre Cup, Champions Cup, Davis Cup, Dr. Rajendra Prasad Cup, Edgbaston

dolichos, pugilism, wrestling, pancratium. On the fourth day, there were equestrian events, pentathlon, race with arms. On the fifth and the final day, there were closing ceremonies and proclamation of the heroes.

During the first six Olympic Games, however, the prize had been a portion of meat or 'meria' taken from an animal sacrificed to the gods. It was only after the VII Games that the olive crown was given to the winners and the moral significance of this prize was considerable. Once the prizes were awarded, a flock of pigeons was released to carry the names of the champions to all the cities of Greece.

The Games came to a sudden end when the Roman Emperor Theodosius banned the competitions and their attendant sacrificial offerings as pagan manifestations. From 395 AD onwards the fall of Olympia was very rapid. In that year the first damage was caused by the invasion of Alaric's barbarians. A year earlier the famous crysele-phante statue of Zeus had been taken to Constantinople. It was destroyed in 475 AD during the great fire. Following the attacks of the Goths, a fire destroyed the temple of Zeus; earthquakes from 522 to 551 and the most severe of all in 580 brought down whatever had remained standing. Glory had vanished and of the vast riches there were now left but a few ruins and the name of Olympia. Something immortal remained, however, and that was the Olympic spirit.

MODERN OLYMPIC GAMES

The revival work of the Games was undertaken by Baron Pierre de Coubertin nearly 1,500 years after the last of the ancient Games. He was born into a family of Italian origin which had settled in France. It was on November 25, 1892, during a conference at Sorbonne about the history of physical exercises, that he first pronounced those famous six words in public "The Restoration of the Olympic Games!" He said that the Games would ennoble and strengthen amateur sports, to give them strength and lasting quality for an essential role in the world of modern education.

It was at the International Congress for the Study of the Propagation of the Principles of Amateurism held in Paris in June 1894 that the delegates led by Baron Pierre de Coubertin and associates unanimously voted to restore the Olympic Games and to create an International Olympic Committee to oversee them. De Coubertin

had planned to propose Paris for the site of the first modern Olympics in 1900 but the enthusiasm and zeal of the delegates was so great that they insisted the first Games to be held in 1896. Athens was, therefore, the venue for the 1896 Games. Since then these Games are held every four years.

The aims of the Olympic Movement are to promote the development of those fine physical and moral qualities which are the basis of amateur sports and to bring together the athletes of the world in a great quadrennial festival of sports. The honour of holding the Olympic Games is entrusted to a city and not a country or area. The choice of a city for the celebration of an Olympiad is with the International Olympic Committee.

The XXII Olympic Games were held in Moscow from July 19 to August 3, 1980. Only 80 of the 140 member countries of the International Olympic Committee participated due to a Western-sponsored boycott of the Games. The XXIII Games were held in Los Angeles from July 28 to August 12, 1984. The Games were boycotted by the Soviet Union and other Eastern bloc countries except Romania because of security reasons. The Games also saw the re-entry of China after an absence of 32 years. It was America's year at the Games just as it was Russia's year in the XXII Games in Moscow in 1980 when Americans had boycotted. The XXIV Games were held in Seoul, the capital of South Korea, from September 17 to October 2, 1988. The Soviet Union was the biggest medals winner of the Games which was participated by 160 countries. The XXV Games were held in Barcelona, the second largest city of Spain, in July-August 1992. Athletes from 171 countries participated and Olympic medals were awarded to a record 64 nations, breaking the mark of 52 set at the 1988 Seoul Olympics.

The XXVI Modern Olympic Games were held in Atlanta (USA) in 1991.

WINTER OLYMPIC GAMES

The Winter Olympic Games started in 1924 AD when the first Games were held at Chamonix, France followed by St. Moritz, Switzerland (1928 & 1948); Lake Placid, New York (1932 & 1980); Garmisch-Partenkirchen, Germany (1936); Oslo, Norway (1952); Cortina d'Ampezzo, Italy (1956); Squaw Valley, California (1960); Innsbruck, Austria (1964 & 1976); Grenoble, France (1968); Sapporo, Japan (1972); Sarajevo, Yugoslavia (1984);

Calgary, Canada (1988) and Albertville, France (1992). The XVII Winter Olympic Games were held in Lillehammer (Norway) in February 1994. Incidentally, the 1994 Games were the first in accord with the International Olympic Committee's new cycle of having Winter Games and Summer Games two years apart, instead of in the same year, as had been the tradition since the commencement of these Games in 1924.

The XVIII Winter Games were held in Nagano (Japan) from February 7 to February 22, 1998. The Games, which were inaugurated by Emperor Akihito, witnessed the participation of 2450 sportspersons (from 72 countries) who competed for over 200 medals in 64 events of 13 sports such as Alpine Skiing, Cross Country Skiing, Ski Jumping, Ice Hockey, Speed & Figure Skating etc. Germany topped the medal tally with 12 gold, 9 silver and 8 bronze, followed by Norway (10:10:5), Russia (9:6:3), Canada (6:5:4), USA (6:3:4), Netherlands (3:4:2). The host country, Japan ranked 7th with a tally of 10 medals (5 gold, 1 silver and 4 bronze).

India's Shiva Keshavan, a 16-year old boy from a small village, despite no sponsorship, no government support, no national training and no equipment but a borrowed sledge, stood second among Asian compellors next to Japan in the singles competition obtaining 28th position.

The XIX Winter Olympic Games will be held in 2002 in Salt Lake City (U.S.A.).

OLYMPIC SYMBOL

It comprises of five rings or circles, linked together to represent the sporting friendship of all people. The rings also symbolise the continents—Europe, Asia, Africa, Australia and America. Each ring is of a different colour, i.e., blue, yellow, black, green and red.

OLYMPIC FLAG

The Olympic flag, created in 1913 at the suggestion of Baron Pierre de Coubertin, was solemnly inaugurated in Paris in June 1914 but it was raised over an Olympic stadium for the first time at the Antwerp Games in 1920. There is also a second Olympic flag, which is used for the Winter Games. These flags are made of white silk and contain five intertwined rings. From left to right the rings are blue, yellow, black, green and red. The rings are meant to recall the five continents and colours, the countries of the world.

At least one of these colours is found on the flag of every country.

OLYMPIC FLAME

It was at the Amsterdam Games in 1928 that for the first time an Olympic flame was ceremonially lighted and burned in a giant torch at the entrance of the stadium. The modern version of the flame was adopted in 1936 at the Berlin Games. The Olympic flame symbolises the continuity between the ancient and modern Games. The torch used to kindle the flame, is first lit by the sun's rays at Olympia, Greece, and then carried to the site of the Games by relay of runners. Ships and planes are used when necessary. On July 11, 1976, space age technology was used to transport the flame from one continent to another.

OLYMPIC MOTTO

The Olympic motto is "*Citius-Altius-Fortius*" (faster, higher, stronger). Rev. Father Didon (1840-1900), headmaster of a school near Paris and great promoter of sports in the French Catholic colleges near the end of the nineteenth century, first used the motto and had it embroidered on the pennants of his school clubs. This succinct definition of the philosophy of sport appealed to father Didon's friend, Baron Pierre de Coubertin, who was responsible for the revival work of the Olympic Games nearly 1,500 years after the last of the ancient Games. It was adopted at his suggestion at the International Congress for the "Study and Propagation of the Principles of Amateurism" on June 23, 1894, the same day on which the restoration of the Olympic Games and the creation of the International Olympic Committee were also decided.

OLYMPIC PRIZES, MEDALS AND CERTIFICATES

While in ancient times the Olympic heroes received a crown of olive branches for their exploits, modern Olympic champions are rewarded with medals and certificates. The winning athlete now receives a gold medal, the athlete in the second place is awarded a silver medal and the third placed athlete wins a bronze medal. In addition, all athletes ranking from first to sixth receive a certificate. Each medal is 60 mm in diameter and 3 mm thick. The first and second place medals are made of 92.5 per cent silver and the medal for the first winner is then

plated with 6 gram of fine gold. Thus this medal is not of full gold. The third place medal is of bronze.

SITES OF SUMMER OLYMPIC GAMES

1896	Athens	1960	Rome
1900	Paris	1964	Tokyo
1904	St. Louis	1968	Mexico City
1908	London	1972	Munich
1912	Stockholm	1976	Montreal
1920	Antwerp	1980	Moscow
1924	Paris	1984	Los Angeles
1928	Amsterdam	1988	Seoul
1932	Los Angeles	1992	Barcelona
1936	Berlin	1996	Atlanta
1948	London	2000	Sydney
1952	Helsinki		(Scheduled)
1956	Melbourne	2004	Athens
			(Scheduled)

Games were not held in the years 1916, 1940 and 1944.

SITES OF WINTER OLYMPIC GAMES

1924	Chamonix, France
1928	St. Moritz, Switzerland
1932	Lake Placid, New York
1936	Garmisch-Partenkirchen, Germany
1948	St. Moritz, Switzerland
1952	Oslo, Norway
1956	Cortina d'Ampezzo, Italy
1960	Squaw Valley, California
1964	Innsbruck, Austria
1968	Grenoble, France
1972	Sapporo, Japan
1976	Innsbruck, Austria
1980	Lake Placid, New York
1984	Sarajevo, Yugoslavia
1988	Calgary, Alberta
1992	Albertville, France
1994	Lillehammer, Norway
1998	Nagano, Japan
2002	Salt Lake City, USA (Scheduled)
2006	Turin, Italy (Scheduled)

6. XXVI Olympics

The XXVI Olympiad were held in Atlanta, the state capital and the largest city of Georgia, in the south-east of the United States from July 19 to August 4, 1996.

These games celebrated the 100th anniversary of the first Modern Olympics which were held in 1896 in Athens.

Over 10,000 athletes from 197 countries participated in the 26 sports, 37 disciplines. The

SCOT of the Atlanta Olympics was a computer-generated creature which resembled neither an animal nor any human and was called as 'IZZY'.

These games kept billions of sports lovers under its thrall presented to the world a fascinating pageant of youth from different parts of the world who offered their best in terms of achievements of endurance, ability and excellence in sheer superlatives—achievements born out of meticulous planning and painstaking efforts, dogged will, dedication and perseverance of sports persons.

Each Olympiad has been a giant leap ahead of the previous one and, beyond doubt, Atlanta was far ahead of Barcelona, and it is quite likely that Sydney will steal a march over all the past ones.

Atlanta offered its package of surprises for one and all, the countries and players alike, not excluding India, with yet another saga of heroic

accomplishments and of what man can achieve if he is fired by indomitable will power, the irrepressible urge to excel and the bold resolve to win at any cost.

And what a sight it was to behold! Carl Lewis jumped to his ninth Olympic gold at the age of 35. Canada's Donovan Bailey surprised everyone by overcoming a poor start to complete 100 metres in 9.84 seconds, earning the title of the fastest man ever. As expected, America's Gail Devers annexed the gold in the women's 100 metres.

Michael Johnson of the USA bagged the 400 and the 200 metres events at amazing timings of 43.49 and 19.32 seconds respectively. A similar feat was repeated by Frenchwoman Mary Jose-Perec, who scored a rare double by winning the 400 and 200 metres and became the lady star of the 1996 Games.

China's Fu Mingxia also achieved a double by annexing both the springboard and platform diving events. Fu became the first woman since Ingrid Kramar of Germany in 1960 to win both the platform and the springboard titles. Akehid Kakhlaohvilic won two golds for Greece in weightlifting in the 99 kg, and then in the clean and-jerk event.

Patuma Roba did Ethiopia proud when she claimed the women's marathon gold at the Olympic

James. Another Ethiopian, Haile Gebrselassie, along with Paul Tergat of Kenya and Salah Hissou of Morocco, made the 10,000 metres and all African affair. The African continent was in the news again when a little known Nigerian, Chioma Ajunwa leaped 7.12 metres and won the long jump event, thus giving Nigeria its first ever Olympic gold.

The big surprises of the Olympics came when India and Pakistan were both shot out of hockey with Holland, Spain and Australia winning gold, silver and bronze respectively.

The pleasant surprise of the Games came when German discus thrower, Lars Reidt, who had blown away his chances at the 1992 Barcelona Games, went for the gold hunt all over again. This time he made sure his foot was in the right position and hurled the discus at a record 69.40 metres for the Olympic gold.

There were triumphs and tragedies and high expectations and great disappointments in the 1996 Olympics.

The hero of the Atlanta Olympics, which concluded on August 4, 1996, was certainly Carl Lewis.

Medals Tally of XXVI Olympics (Top Twenty Nations)

Country	Gold	Silver	Bronze	Total
United States	44	32	25	101
Russia	26	21	16	63
Germany	20	18	27	65
China	16	22	12	50
France	15	7	15	37
Italy	13	10	12	35
Australia	9	9	23	41
Cuba	9	8	8	25
Ukraine	9	2	12	23
South Korea	7	15	5	27
Hungary	7	4	10	21
Poland	7	5	5	17
Spain	5	6	6	17
Romania	4	7	9	20
Netherlands	4	5	10	19
Greece	4	4	0	8
Czech Republic	4	3	4	11
Switzerland	4	3	0	7
Denmark	4	1	1	6
Turkey	4	1	1	6

The record winner of nine gold medals in different events, Lewis first bagged the 100 metres title in the 1984 Los Angeles Olympics where he also got a gold each in the 200 metres event, the long jump and the 4 × 100 metres relay. He followed up a 100 metres gold in 1988 in Seoul after Ben Johnson was disqualified for drugs. There he added the long jump gold to his kitty. In Barcelona, Lewis added two more golds to his name. With his ninth gold in Atlanta, Lewis equalled Finnish runner Paavo Nurmi's record of nine Olympic golds and also equalled American discus thrower Al Oerter's feat of winning golds in four successive Olympics.

In fact, day after day the track and field competition produced Olympic records marked with personal triumphs and surprises. In the 5,000 and 10,000 metres events, Ethiopian Haile Gebrselassie scored easily over his rivals and stunned sports lovers with his style and ease with which he breasted the tape.

Son of a farmer in the Assela village of Ethiopia, Gebrselassie, since his childhood, was a keen follower of Minuts Yifter, another great Ethiopian who won the 5,000 metres and the 10,000 metres in the 1980 Moscow Olympics. It was while listening to the feats of Yifter over the radio that the then 7-year-old Gebrselassie made up his mind to equal the feat and hold aloft the Ethiopian flag in the Olympics.

Like Gebrselassie, it was American Michael Johnson's dream to do a double in the Olympics. And he did that with dream runs both in the 400 metres and the 200 metres. Truly, Johnson is the brave new athlete in the brave world of sports. Just a shade over six feet, weighing roughly 80 kgs, muscled like some of Michaelangelo's most spectacular work, he is the epitome of sporting excellence fit to be idolised.

For sometime now he has been knocking on the gates of heaven. Earlier in the year, Johnson had also notched the 200-400 double in the US Championships. Indeed, he is in such tremendous form that athletic observers had all along been saying that he would be the most fancied star for both the events at the Olympics.

Unlike Johnson, another American superstar, Jackie Joyner Kersee couldn't repeat her Olympic triumph. Winner of two golds in the long jump and heptathlon in the 1988 Seoul Olympics and a gold at the Barcelona Games in the heptathlon, she had to withdraw from the competition in Atlanta

after pulling a hamstring muscle. The queen of modern heptathlon is likely to retire from sports. Suffering from breathing problem, her health has been seriously affected by her hectic track and field career.

The gold for which Joyner Kersee was hankering went to 24-year-old Syrian, Ghada Shouaa, who was unbeatable in the heptathlon with 6780 points. After the victory she said, "I wanted to compete with Joyner Kersee. I was confident I could beat her. I was disappointed since she was injured."

In the case of the Ukrainian superstar pole vaulter Sergei Bubka, it was the crowd which was disappointed. Bubka who has set 35 world records in the pole vault and won the 1988 Olympic gold, didn't do it again. Sports fans waited with bated breath to see if Bubka would go for another Olympic or World record. But, to their dismay, he walked out of the Olympic Games before taking a jump in the qualifying rounds and the officials announced that he had withdrawn from the competition.

Like Bubka, China's Wang Junxia arrived in Atlanta with a tremendous reputation of being the fastest miler, but unlike Bubka she did not let her reputation take the better of her. She won the 5,000 metres with consummate ease in 14:59:88, the fastest time ever run by a woman in America.

Like most Olympics, the best surprises came to the fore in the swimming event. Hungary's Krisztina Egerszegi set the pool ablaze when she claimed a fifth gold and also became the only woman ever to win a single individual event at three Olympics in the women's 200 metres backstroke.

Similarly, Russia's Alexander Popov became the first man ever to win the 50 and 100 metres golds in two successive Olympics. He also became the first swimmer since the legendary Johnny Weismuller to win the 100 metres event twice. But the ultimate glory was reserved for Brooke Bennett, the 16-year-old American, who won the 800 metres freestyle event defeating the triple Olympic gold medalist Janet Evans.

Even as youth triumphed in swimming, the weightlifting events were charged up by the feats of a diminutive Chinese, Zhan Xugang who, in a matter of a day, annexed three titles in snatch, clean and jerk. But the real hero was Naim Suleymanoglu, who became the first weightlifter in

Olympic history to win three gold medals in the featherweight category.

Another muscleman, Alexander Karelin won his third successive Olympic gold medal in super heavyweight Greco-Roman wrestling. He, now, has every World and Olympic title since 1988. After the event, when asked what inspired him, he simply said, "I like the colour of gold!"

In gymnastics, it was the turn of the American women who enchanted the audience with grace and rhythm. Shannon Miller, Jaycie Phelps, Amy Chow, Dominique Dawes, Karri Strug and Dominique Moceanu won not just the gold but the hearts of spectators at the Grand Georgie Dome hall specially constructed for indoor events.

Some of the grittiest performances came from athletes who were considered over-the-hill. A shining example being Sweden's Ludmila Engquist, the 32-year-old sprint hurdler who played earlier for the erstwhile Soviet Union under the name of Ludmila Nerozhlenko. Released from a drug-related ban in December 1995, she won the 100 metres hurdles in a photo finish with Slovenian Brigeta Bukovec. American Gail Devers, the winner of the 100 metres, came fourth in this race.

The pressure of competing was felt by Ethiopia's Fatuma Roba who overcame the summer heat to claim the women's marathon gold at the Olympic Games.

Roba spurred ahead around the 15 km mark and ran alone the rest of the 42.195 km race. She won in 2 hr, 26 min. 5 sec. Valentina Egurova of Russia (2:28:05) won the silver and Yuko Arimori of Japan (2:28:39) the bronze.

Roba, who finished 19th in the World Championships last year, was in the third place and Valentina Yegorova (Russia), one of the medal favourites and the winner of the world half-marathon race last year, was fourth.

As per expectations, Fu Mingxia of China, the world's supreme women's highboard diver since she was 12, retained her Olympic 10 metre platform title outclassing all her rivals. Fu, now 17, won by an enormous margin of 42.36 points, leaving the rest of the 12-strong final field to scrap for silver and bronze.

Fu, who won her first world title in 1991 and retained it in 1994, has now accomplished the same double at the Olympics. But she was far

from overwhelmed by her performance. "I think that I did okay—not particularly well, but no big mistakes either," she said.

Fu piled up 521.58 points from a combination of the morning's four semifinals compulsory dives and the late evening final's five optionals.

For a country like India that never confidently straddled the international tennis courts, young Leander Paes has come as a whiff of fresh air and hope. The winner of the junior men's single title at Wimbledon 1990, Paes has made a kind of history in India's dismal Olympic record by becoming the only second Indian ever to win an

individual event. Leander won against Brazilian Fernando Meligeni, 3-6, 6-2, 6-4, which got him the bronze.

XXVII Olympic Games: The XXVII Olympic games are to be held in Sydney (Australia) in 2000 AD. The picturesque Sydney Harbour will provide a stunning back drop to the Games to be held from September 16 to October 1. The Olympic park, centre-piece of the games is situated in Homebush Bay. The games logo evokes the Olympic flame as well as the shell-shaped roof of the Sydney Opera House. Australia is one of the three countries who have attended every game since 1896.

7. Commonwealth Games

After Olympics, Commonwealth Games is the second largest sports festival in the world. The games are held once in four years but only in between the Olympic years. The first Commonwealth Games were held in 1930 at Hamilton, Canada. The 10th Commonwealth Games were held at Christchurch, New Zealand in 1974, the 11th Games at Edmonton (Canada) in 1978, the 12th Games at Brisbane (Australia) in 1982, the 13th Games in Edinburgh (Scotland) in 1986, the 14th Games in Auckland (New Zealand) in 1990 and the 15th Games in Victoria (Canada) in 1994, where about 3,350 athletes from a record 64 nations (including South Africa, which joined the family of Commonwealth athletes after 36 years) participated. Namibia also, which gained its independence in 1990, made its debut while Hong Kong made its final appearance in the Games before being ceded to China in 1997.

16th Commonwealth Games : Malaysia had the proud privilege of being the first Asian country to host the Commonwealth Games since their inception. The 16th Commonwealth Games (September 11-21, 1998) brought together over 4000 competitors from 70 countries who competed for 1176 medals in 219 events spread over 16 disciplines including cricket, the new entrant in the Games. Unlike past ceremonies, the Games were declared open by Malaysia's King, Tunku Ja' Alfar Abdul Rehman instead of British Queen who, however, declared the closure of Games on September 21, 1998.

MEDALS TALLY

	G	S	B	Total
Australia	80	60	58	198
England	36	47	53	136
Canada	30	31	38	99
Malaysia	10	14	12	36
South Africa	9	11	14	34
New Zealand	8	7	20	35
India	7	10	8	25
Kenya	7	5	4	16
Jamaica	4	2	0	6
Wales	3	4	8	15
Scotland	3	2	7	12
Nauru	3	0	0	3
Northern Ireland	2	1	2	5
Zimbabwe	2	0	3	5
Ghana	1	1	3	5
Cyprus	1	1	1	3
Mauritius	1	1	1	3
Tanzania	1	1	1	3
Trinidad-Tobago	1	1	1	3
Bahamas	1	1	0	2
Mozambique	1	1	0	2
Borabados	1	0	2	3
Lesotho	1	0	0	1
Cameroon	0	3	3	6
Namibia	0	2	1	3
Seychelles	0	2	0	2
Sri Lanka	0	1	1	2
Bermuda	0	1	0	1
Fiji	0	1	0	1
Isle Of Man	0	1	0	1
Pakistan	0	1	0	1
N. Guinea	0	0	1	1
Uganda	0	0	1	1
Zambia	0	0	1	1

The XVII Commonwealth Games are scheduled to be held in Manchester (U.K.) in 2002.

India's performance : India can derive satisfaction from the fact that in contrast to its performance during the last Commonwealth Games, it did a bit better. The seven weightlifters won a total of 13 medals; one out of the four boxers won a silver, each member of the badminton team wore a medal around the neck while the shooters contributed seven medals, four of them gold.

Two youngsters from Thuthukudi (Tuticorin) brought gold for their country. The weightlifters Dharmraj Wilson and Arumugam Pandian clinched two gold and three silver medals in the 56 category; while Satish Rai won gold in 77 kg category. Wilson won the gold in clean and jerk; Pandian picked up the overall title, both establishing new Commonwealth records. Pandian also won silvers in snatch and clean and jerk. This was not all: G. Gnanasekhar and Murugesan Arun bagged three bronze medals in the 62 kg category. A bronze each was also taken by G. Viadivelu and Sandip Kumar in the 69 kg category. The performance of Indian weightlifters has all the more been commendable in the context of many lifters from the former Soviet Union having migrated to Canada and Australia and having participated in the Games.

In the shooting event, the trailblazers were shooters Mansher Singh and Manavjit Singh who struck India's first gold at the Games, winning the trap pairs event at the Langkawi Shooting Range.

all, the Indian shooters bagged four gold, two silver and one bronze, despite the competition having become tough after the entry of contestants from the erstwhile Soviet Union. At the last Games in Victoria, Canada, Jaspal Rana had won two gold medals and Ashok Pandit one. The winning spree that began on September 13 picked up momentum on September 15 when Jaspal Rana and Ashok Pandit won the centre-fire pistol pairs event: the Indians were defending their title and were firm favourites. The Indian tally of 1154, far below its winning tally of 1168 at Victoria, Canada, four years ago, was four points better than by the Canadians, John Rochon and Metodi Igorov, who took the silver. Rana and Satendra Kumar got a silver on September 16 when they finished two points behind England's Michael Gault and Nick

Baxter in the pair events of air pistol. In all, Rana wrested two gold and two silver medals. A shining star in India's shooters' team was Roopa Unnikrishnan who won the gold in the sport rifle prone event on September 17. Bhanwar Dhaka picked a bronze from free pistol.

Nineteen-year old Allahabad boy Abhinav Shrivastava was India's hero on the badminton finals on September 14 when he guided his team to a remarkable 3-2 victory over England in its penultimate round-robin match which paved the way for the silver medal. Malaysia expectedly took the gold. The Indian women were unlucky to end up with a bronze after tying with England and Malaysia and losing out on game difference. The Indian women players could have fared better had they been participating in international tournaments regularly. Aparna Popat, the India No. 1, was ahead of all except World No. 10, Kelly Morgan of Wales, to whom she lost in the women's singles final claiming a silver medal. India won a medal in badminton after a long time since Syed Modi's gold in the men's singles at the 1982 Brisbane Games. Prakash Padukone, India's byword for success in badminton, was the inspiration and moving spirit for Indian players in Kuala Lumpur.

The following are the Indian medal winners :

GOLD

Shooting : Jaspal Rana (centre fire pistol event), Jaspal Rana and Ashok Pandit (centre fire pistol pairs), Roopa Unnikrishnan (sport rifle prone event), Mansher Singh and Manavjit Singh (trap pairs event).

Weightlifting : Dharmraj Wilson (clean and jerk), Arumugam Pandian (over-all title), Satish Rai in 77 kg category.

SILVER

Shooting : Jaspal Rana and Satendra Kumar (pair events of air pistol).

Weightlifting : Arumugam Pandian 2 medals (in snatch, clean & Jerk), Dharmraj Wilson (total effort).

Badminton : Abhinav Shrivastava, Aparna Popat, P. Gopichand (team championships).

Boxing : Jitender Kumar.

BRONZE

Shooting : Bhanwar Dhaka (free pistol)

Weightlifting : G. Gnanasekhar and Murugesan Arun (3) in 62 kg category, G. Viadivelu and Sandip Kumar in 69 kg category.

Badminton : P. Gopichand.

India's performance in hockey in the Games was once again a story of missed or lost opportunities; the guys and girls came near the finishing line only to develop cold feet. India finished fourth, after going down 3-5 to England on penalty strokes. Once again the Aussies stole the limelight grabbing the gold and leaving the Malaysians clutching the silver.

And in cricket too the Indian team's ignominious exit was no surprise with many of the top Indian players opting to play in the Sahara Cup series against arch rivals Pakistan in Toronto. Result: the Indian team clicked neither in Toronto nor in Kuala Lumpur. And there was South Africa to strike gold leaving the Aussies fretting and fuming.

Will India go up in the medal tally at the next Commonwealth Games? None can predict the unpredictable.

VENUES OF COMMONWEALTH GAMES (1930—2002)

Venue	Year	Country
1. Hamilton, Canada	1930	11
2. London, U.K.	1934	16
3. Sydney, Australia	1938	15
4. Auckland, New Zealand	1950	12
5. Vancouver, Canada	1954	24
6. Cardiff, U.K.	1958	35
7. Perth, Australia	1962	35
8. Jamaica, West Indies	1966	34
9. Edinburgh, U.K.	1970	42
10. Christchurch, New Zealand	1974	38
11. Edmonton, Canada	1978	48
12. Brisbane, Australia	1982	47
13. Edinburgh, U.K.	1986	26
14. Auckland, New Zealand	1990	55
15. Victoria, Canada	1994	64
16. Kuala Lumpur, Malaysia	1998	70
17. Manchester, U.K.	2002	(Scheduled)

8. Asian Games

India played a leading role to organise sports festival for Asian countries on Olympic lines. The first Asian Games were held at New Delhi in 1951 followed by Manila, Philippines (1954); Tokyo, Japan (1958); Jakarta, Indonesia (1962); Bangkok, Thailand (1966, 1970, 1978 & 1998); Tehran, Iran (1974); New Delhi, India (1982); Seoul, South Korea (1986); Beijing, China (1990); Hiroshima, Japan (1994).

XIII Asian Games : The opening ceremony of the 13th Asian Games by Thai King Bhumibol Adulyadej, world's longest serving monarch, at the Rajmangala National Stadium at 16.45 hours in Bangkok on 6th December, 1998 marked the "Spirit of Asia" portraying the cultural roots of Asian countries in a bid to usher in "Friendship Beyond Frontiers" in the continent. Over 8000 athletes from 41 countries participated in the 36 sports events which included Athletics, Aquatics, Archery, Badminton, Baseball, Basketball, Bowling,

Boxing, Canoeing, Cycling, Equestrian, Fencing, Football, Golf, Gymnastics, Handball, Hockey, Judo, Kabaddi, Karate, Modern Pentathlon, Rowing, Sepak Takraw, Shooting, Softball, Sot Tennis, Table Tennis, Taekwondo, Tennis, Volleyball, Weightlifting, Wrestling, Wushu and Yachting.

At a grand closing ceremony (December 1998), tributes were paid to the athletes for the spirit of friendship generated in the City of Angels throughout the fortnight of the Games. The Japanese runner, Koji Ito won the Samsun "Most Valuable Player" trophy with a cheque of \$100,000. Cultural events flanked the usual closing ceremonies like the march of the contingents into the arena, the hoisting of the Olympic Council of Asia flag, the official closure of the 13th Asian Games by the OCA President, Sheikh Ahmad Fahad Al-Sabah, a cultural performance by South Korea—the hosts for XIV Games at Pusan in 2002 and the extinguishing of the games flame.

Following is the Medals Tally of the Top 20 Nations in the XIII Asian Games :

Country	Gold	Silver	Bronze	Total
China	129	77	68	274
South Korea	65	47	52	164
Japan	52	61	68	181
Thailand	24	26	40	90
Kazakhstan	24	24	30	78
Taiwan	19	17	41	77
Iran	10	11	13	34
North Korea	7	14	12	33
India	7	11	17	35
Uzbekistan	6	22	12	40
Indonesia	6	10	11	27
Malaysia	5	10	14	29
Hong Kong	5	6	6	17
Kuwait	4	6	4	14
Sri Lanka	3	0	3	6
Pakistan	2	4	9	15
Singapore	2	3	9	14
Qatar	2	3	3	8
Mongolia	2	2	10	14
Myanmar	1	6	4	11

For India, the Bangkok Asiad will be hailed as a landmark achievement, since it was able to regain the Men's Hockey title after a lapse of 32 years, ensuring its direct entry into the Sydney Olympics (2000). Besides, in track and field events, it emerged next to China and Japan. In over-all medals tally too, India improved its position significantly from 22 medals at Hiroshima (1994) to 35 at Bangkok (1998); though in over-

all ranking, it slipped to 9th place from 8th in Hiroshima.

The following is the list of Indian Gold and Silver medals winners at the XIII Asian Games.

GOLD

1. Jyotirmoyee Sikdar (Athletics 1500 metres)
2. Jyotirmoyee Sikdar (Athletics 800 metres)
3. Kabaddi Team (Captain : Vishwajit Palit)
4. N.G. Dingko Singh (Men's Boxing)
5. Men's Hockey Team (Captain : Dhanraj Pillai)
6. Ashok Shandilya (Billiards—Singles)
7. Ashok Shandilya & Geet Sethi (Billiards—Doubles)

SILVER

1. Rosa Kutty (Athletics—800 metres)
2. Sunila Rani (Athletics—5000 metres)
3. Jincy Philips, K.M. Beenamol, K.C. Rosa Kutty & Jyotirmoyee Sikdar (Athletics (Women) 4 x 400 metres relay)
4. Lijo David Thottan, P. Ramachandran, Paramjeet Singh & Jata Shankar (Athletics (Men) 4 x 400 m metres relay)
5. Geet Sethi (Billiards—Singles)
6. Women's Hockey Team (Captain : Pritam Rani Thakran)
7. Kamam Malleshwari (Weightlifting—Women)
8. Shakil Singh (Shotput)
9. Anil Kumar (Discus Throw)
10. Jaspal Rana (Shooting—Centre-fire pistol Individuals)
11. Zorawar Singh, Mansher Singh, Manavjit Singh (Shooting—Trap Team)

The idea of organising a World Cup of cricket was mooted and agreed to in principle in 1971 when such a proposal was discussed at a meeting of the International Cricket Conference in London. However, due to various commitments the tournaments could not be staged until 1975 when the original plan of a South African team's visit to England fell through following opposition to the country's racial policy. England's Prudential Assurance Company came forward with sponsorship and for three consecutive years—1975, 1979 and 1983—the one-day limited overs cricket tournament was held in England. It became famous as the Prudential Cup.

In the first two tournaments, apart from the six full members of the International Cricket

Conference (England, Australia, West Indies, New Zealand, India and Pakistan), Sri Lanka, before being elevated to Test status in 1981, had joined East Africa in 1975 and Canada in 1979 (two top teams among the associate members) to complete the groups in the tournaments proper.

The West Indies, under Clive Lloyd, not only won the first two tournaments in 1975 and 1979 but in true Calypso style they produced sparkling cricket and confirmed their unassailable supremacy in this game.

India broke the West Indian stranglehold in 1983 to open a new chapter in the brief annals of this prestigious tournament. Apart from some sparkling individual performance, the compulsion

witnessed thrills and upsets. India with a poor total of 183 bowled themselves back into the game and became memorable winners by 43 runs at the sensational final at Lord's. When India managed a total of 183 in the final with useful contributions from Srikkanth (38), Amarnath (26) and Sandeep Patil (27), it seemed an easy total for the West Indies to overcome, but they surprisingly folded up for 140 runs and India nullified off one of the cricket's greatest upsets. Amarnath's performance earned him the coveted Man of the Match award.

THE WORLD CUP 1987

The month-long cricket extravaganza, held for the first time in this subcontinent, came to a climactic end with Allan Border's Australians annexing the fourth Reliance World Cup with a blistering seven-run triumph in a closely fought final over Mike Gatting's Englishmen. The underdogs struck with a vengeance at the near-packed Eden Gardens in Calcutta on November 8, 1987 with an impeccable all-round performance which took the wind out of England's sails.

After piling up 253 runs for the loss of five wickets, the Australians restricted England to 246 or eight in the stipulated 50 overs to end five weeks of thrilling one-day matches played in India and Pakistan. A side that had been given little hope at the start carried away the glittering, diamond-studded Reliance Cup and the cash award of £30,000 (about Rs. 6 lakh). A beaming Border, who had made no tall claims prior to the competition, was cheered by his colleagues. It was indeed the best moment of the Australian captain's life. This was their first Cup triumph after having lost to the West Indies by 17 runs in the inaugural year of the competition in 1975. Border's luck with the toss and opting to bat had, as a hindsight, contributed in large measure to Australia's success.

The Australians changed the course of the wheel of fortune by virtue of their determination and self-belief. The second quality was most evident in the manner in which the team defended its total of 253 by digging in and fighting all the way. It was not the greater totals and yet it was not undefendable. The bottom line is grit in such situations and Australia had that in plenty.

THE WORLD CUP 1992

The World Cricket Cup has returned to the subcontinent. After a gap of nearly a decade. And for Imran Khan and Pakistan a long cherished

dream came true after Kapil Dev and his "Devils" epic triumph in 1983.

Pakistan won cricket's fifth World Cup with a superb all-round performance as Wasim Akram and Mushtaq Ahmed took three wickets apiece to sink England in the final in Melbourne on March 25, 1992. It was Pakistan's first appearance in a final and the third time England have failed at that hurdle when they lost eventually by 22 runs.

Pakistan made 249 for six wickets in 50 overs and dismissed England for 227 with four balls remaining to win the Cup.

Wasim Akram was the Man of the Match. New Zealand captain Martin Crowe was on March 21 named as the cricket World Cup's Man of the Series, winning a Nissan sports car.

India bowed out of the World Cup cricket extravaganza which began in Australia and New Zealand on February 22, 1992 as its hopes, slender to start with, ended in despair following the defeat against the all-conquering New Zealanders. It was their fourth reverse in seven matches, a dismal record.

THE WORLD CUP 1996

The great "show on earth" in sports, a month-long \$2 million extravaganza—Wills World Cup cricket championship—was inaugurated on February 11, 1996 at the Eden Gardens in Calcutta where hundreds of thousands people watched the much talked-about laser-beamed inaugural ceremony, which was termed as "a fairyland spectacle". The grand opening ceremony was planned to stump the 12 teams taking part in the Wills World Cup.

The 12 teams (with names of captains in brackets) are: Australia (Mark Taylor), India (Mohammed Azharuddin), Sri Lanka (Arjuna Ranatunga), West Indies (Richie Richardson), Zimbabwe (Andy Flower), England (Mike Atherton), Holland (Steve Lubbers), New Zealand (Lee Gernon), Pakistan (Wasim Akram), South Africa (Hansie Cronje), Kenya (Maurice Odumbe) and United Arab Emirates (Sultan Zarwani).

In the finals on March 17, 1996, Sri Lanka opened a glorious chapter in the annals of world cricket by proving the soothsayers false and trailing a blaze of undimmed glory before a jam-packed Gaddafi Stadium in Lahore, and millions of cricket fans, glued to their TV sets, across the world. Arjuna Ranatunga and company emerged invincible for the rest of the teams as they trounced one team after another to ride to the last battleground in Lahore. Even the rain gods

seemed to augur well for the glory of the Sri Lankans with a bountiful shower on the eve of the finals and a sharp shower later as the Sri Lankan team braced up for the coveted trophy after they made Australia, the favourites, bite the dust.

On the day of the Island's unstoppable march to victory, the Islanders, immensely proud of their boys playing in distant Lahore, forgot for the moment the bitterness of the 13-year-old war and exulted over a deserved triumph of their nation. There was a streak of nemesis, too, in that they wrested their cup of joy from the same nation that humiliated them by refusing to play in Colombo.

The hero who stole the hearts of millions of watchers of the grand final was the indelible Aravinda de Silva, the vice-captain of the Sri Lankan team who clinched the Waterloo from Australia by his all-round contribution of wickets, catches and then a stunningly amazing century. His three wickets, two catches and his innings made him the indisputable choice for the Man of the Match award. Together with Asanaka Gurusinha, Aravinda stood up to the sustained aggression of the Aussies.

The Sri Lankans left little doubt about who was the better team on the epoch-making day as they limited Australia to 241 for seven and topped home with seven wickets and 3.4 overs to spare.

Australia's 241 for seven in 50 overs failed to cost the redoubtable Sri Lankans. It was that Australia's fielding, going awry with a would-have-been catch passing them by, and their bowling were rendered totally ineffective by the stranglehold of the ingeniously-textured Sri Lankan gameplan. The finals in Lahore followed the fixed pattern of a well-executed design by Ranatunga and company of the matches played earlier with other teams.

Planning, flexibility, cool, unruffled self-confidence and unchallengeable team work were the factors that laid the groundwork for Sri Lanka to build its superstructure of success on.

The historic victory earned Sri Lanka the top prize of 30,000 pounds and the glittering Wills World silver cup. Besides, PILCOM announced a cash award of \$1,00,000. More rewards were conferred on the players back home.

A jubilant, but humble Arjuna Ranatunga said: 'We don't believe in taking revenge. We have played some good matches against Pakistan,

West Indies and India and it was just another match against Australia although it was the final day. We just wanted to play a good game and win the final There are many who have helped us...'

The bottomline is: it may take a lot of brain and brawn to smash Sri Lanka's unique record; they played six matches in the Wills World Cup 1996 and won them all.

Sri Lanka thus took home the replica of the Wills World Cup Trophy as the symbol of supremacy in cricket.

In the World Cup 1996, Sachin Tendulkar was the highest rungetter (523), while Anil Kumble was the highest wicket-taker (15).

THE WORLD CUP 1999

Twelve teams—England, Sri Lanka, India, South Africa, Zimbabwe and Kenya (Group A), Australia, Scotland, West Indies, Pakistan, New Zealand and Bangladesh (Group B)—participated in the 38-day cricket extravaganza of the World Cup 1999 (May 14–June 20) that had over a billion viewers across the globe glued to their TV sets. Australia lifted the World Cup by defeating Pakistan by a record 8 wickets in the Finals on June 20, 1999 at the Lord's. Pakistan scored 132 while Australia 133 for 2. Man of the Match—Shane Warne. Player of the Tournament—Lance Klusener.

India's Rahul Dravid who scored the maximum runs—461, has also the distinction of scoring highest number of runs by any wicket-keeper in the World Cup, i.e. 145 against Sri Lanka on May 26, 1999 at Taunton. The highest number of runs (523) in a single World Cup were scored by Sachin Tendulkar during Wills World Cup 1996.

Saurav Ganguly became the top Indian scorer in an innings when he scored 183 runs against Sri Lanka on May 26 during World Cup '99, the highest by any Indian in One Day Internationals and in the World Cup, bettering Kapil Dev's 175 against Zimbabwe in the 1983 World Cup. Also his seven sixes in the same innings equalled the world record for the most number of sixes set by Vivian Richards of West Indies against Sri Lanka in the 1987 Reliance World Cup.

Geoff Allott (New Zealand) became the highest wicket taker in a single World Cup when he claimed 20 wickets in 9 matches of the World Cup '99, bettering the 18-wickets record of Roger Binny (India) in 1983, Craig McDermott (Australia) in 1987 and Wasim Akram (Pakistan) in 1992. Shane Warne (Australia) also claimed 20 wickets but in 10 matches of the World Cup '99 itself.

Pakistan's Saqlain Mushtaq, who achieved the second Hat-Trick of the World Cup, joined the Indian speedster Chetan Sharma who has the distinction of recording the First Hat-Trick in the World Cup. Saqlain claimed the wickets of Henry Longa, Adam Huckle and Mpello Mbangwa of Zimbabwe in a World Cup '99 Super-Six match on June 11, 1999. Chetan claimed the wickets of Ken Rutherford, Ian Smith and Ewan Chatfield of New Zealand in 1987 World Cup.

The centurians in the World Cup '99 were: (1) Sourav Ganguly (India) vs. Sri Lanka (183); (2) Rahul Dravid (India) vs. Sri Lanka (145); (3) Sachin Tendulkar (India) vs. Kenya (140); (4) Neil Johnson (Zimbabwe) vs. Australia (132); (5) Steve Waugh (Australia) vs. South Africa (120); (6) Saeed Anwar (Pakistan) vs. New Zealand (113); (7) Rahul Dravid (India) vs. Kenya (104); (8) Mark Waugh (Australia) vs. Zimbabwe (104); (9) Saeed Anwar (Pakistan) vs. Zimbabwe (103); (10) Herschelle Gibbs (South Africa) vs. Australia (101); (11) Ajay Jadeja (India) vs. Australia (100).

WORLD CUP CRICKET HISTORY

Year	Venue	Winner/Runner
1975	UK	West Indies beat Australia by 17 runs
1979	UK	West Indies beat England by 92 runs
1983	UK	India beat West Indies by 43 runs
1987	India & Pakistan	Australia beat England by 7 runs
1992	Australia	Pakistan beat England by 22 runs
1996	India, Pakistan & Sri Lanka	Sri Lanka beat Australia by seven wickets
1999	UK	Australia beat Pakistan by 8 wickets
2003	South Africa (Scheduled)	

10. World Cup Football Championships

Next only to the Olympic Games in popularity, the largest single sporting event, the World Cup football tournament is organised by the Federation Internationale de Football Association (FIFA) once in four years since 1930. It was on July 18, 1930 that the first-ever World Cup match was played between Uruguay and Chile, at the newly built Centenary Stadium in Montevideo. The 1994 World Cup final was held in USA when Brazil beat 3-2 Italy for the title. The 1998 World Cup final was held in France. France beat the reigning champions Brazil 3-0.

The World Cup now officially designated as Jules-Rimet Cup, named after the French lawyer who was President of FIFA from 1921 to 1953, is 12" high and made of solid gold.

Brazil clinched a record fourth World Cup title in Pasadena on July 17, 1994 when they won the first penalty shoot-out in the history of the competition.

After a disappointing final against Italy finished goalless after extra time, the Brazilians won the shoot-out 3-2 when Roberto Baggio fired the Italians' fifth penalty over the bar. It was

cruel luck for Baggio who had almost single-handedly taken his side to the final with his five goals.

Brazil have taken the title for the first time since 1970 following their triumphs in 1958 and 1962.

Sweden made the best of the consolation game. They produced their best soccer of the tournament to claim the third place with a 4-0 drubbing of Bulgaria on July 16.

The month-long World Cup soccer tournament got off to a high energy start on June 17, 1994 with an opening ceremony that saw Chicago (United States), host of the first match.

Besides Chicago, the other venues were Los Angeles, Detroit, Orlando, Washington, New York, San Francisco and Dallas.

Teams from the 24 qualifying countries were divided into six groups (A-F). Each team played its three group opponents once.

The game winner got three points, tied game one point each team and the game loser got no points.

WORLD CUP FOOTBALL HISTORY (1930-1998)

Year	Winners	Runners-Up
1930	Uruguay	Argentina
1934	Italy	Czechoslovakia
1938	Italy	Hungary
1950	Uruguay	Brazil
1954	W. Germany	Hungary
1958	Brazil	Sweden
1962	Brazil	Czechoslovakia
1966	England	W. Germany
1970	Brazil	Italy

<i>Year</i>	<i>Winners</i>	<i>Runners-Up</i>
1974	W. Germany	Poland
1978	Argentina	Holland
1982	Italy	W. Germany
1986	Argentina	W. Germany
1990	W. Germany	Argentina
1994	Brazil	Italy
1998	France	Brazil
2002	Scheduled to be held in Japan & South Korea	
2006	Scheduled to be held in England	
Note : In 1942 & 1946 games were not played.		

11. SAF Games

The Eighth SAF Games (September 25-October 4, 1999) were inaugurated at Kathmandu by King Birendra Bir Bikram Shah Dev of Nepal. As hitherto, India notched the top position winning 197 medals including 102 gold. In athletics, Sunita Rani of India bagged three gold medals—in 10,000 metres at 34 minutes 38.72 seconds breaking the record of 35:42.74 set by Sri Lanka's Sujewa Nilmani; in 1500 metres at 4:14.23 seconds surpassing the previous record of 4:19.65 seconds set by her compatriot Rosa Kutty; in 5000 metres at 15:56.46 seconds setting a new record. The old mark was held by Madhuri Saxena at 16:34.51. Nisha Millet, India's Best Sportswoman in 5th National Games (Imphal: February, 1999) won seven gold medals in various swimming events breaking five records including that of her compatriot Bula Choudhary's 29.29 seconds in 50m freestyle set at Colombo in 1991, by timing 28.71 seconds.

In Volleyball, India clinched both the men's and women's titles. India retained the men's title defeating Pakistan 25-19, 25-17, 25-18 while its women's team won the gold beating Sri Lankans 25-21, 21-25, 25-16, 25-15. In Boxing, Asian Games bantamweight gold-medalist N.G. Dingko Singh won the gold beating Bahadur Hari of Nepal. In this

category, Indian pugilists bagged six of the 12 gold medals at stake on the concluding day of the boxing events on September 30, 1999. In Weightlifting, Indian weight-lifters clinched all the eight titles on offer. In Table Tennis too, India won both men's and women's golds, beating their Pakistani counterparts by a 3-0 margin in the finals. In Football, Bangladesh clinched the gold defeating Nepal 1-0, while holders India had to be content with a bronze by beating Maldives 3-1. In women's Taekwondo, India broke Nepal's dominance with G. Mallini clinching the heavyweight gold.

The 9th SAF Games will be held in Peshawar, Pakistan in 2000.

	Medals Tally			
	G	S	B	T
India	102	58	37	197
Nepal	31	10	24	65
Sri Lanka	16	42	61	119
Pakistan	10	36	31	77
Bangladesh	2	10	36	48
Bhutan	1	6	9	16
Maldives	0	0	4	4
Total	162	162	202	526

12. World's Well-Known Sports Persons

ARCHERY

Cho Youn-jeong (S. Korea) – 1992 Olympics Gold Medal (women's)
 Justin Muish (US) – 1996 Olympics Gold Medal (men's)
 Kim Kyung-wook (Korea) – 1996 Olympics Gold Medal (women's)
 Lee Eun-Kyong (S. Korea) – 1994 Asiad Gold Medal (women's)
 Park Kyung – Mo (S. Korea) – 1994 Asiad Gold Medal (men's)
 Sebastian Flute (France) – 1992 Olympics Gold Medal (men's)

ATHLETICS

Ajit Bhaduria & Padmini Thomas – 1996 Arjuna Award
 Bagicha Singh – 1987 Arjuna Award
 Bahadur Singh – 1998 Dronacharya Award
 Balwinder Singh – 1987 Arjuna Award
 Deena Ram – 1990 Arjuna Award
 Jyotirmoyee Sikdar – Rajiv Gandhi Khel Ratna Award 1998-99; XIII Asiad Gold Medalist in 800 m and 1500 m; 1995 Arjuna Award
 Hargobind Singh – 1998 Dronacharya Award
 K. Saramma – 1993 Arjuna Award
 K.C. Rosakutty – 1994 Arjuna Award
 Koji Ito (Japan) – Star of the XIII Asian Games
 Mercy Kuttan – 1989 Arjuna Award
 Neelam J. Singh – 1998 Arjuna Award
 Pahalnaji Ratanji 'Polly' Umrigar – 1998-99 C.K. Jeyaraj Award
 Paramjit Singh – 1998 Arjuna Award; 1998 National Open Champion
 Rachita Mistry – 1998 Arjuna Award
 S.D. Eshan – 1998 Arjuna Award
 Shakti Singh – 1995 Arjuna Award
 Sirichand Ram – 1998 Arjuna Award
 Sunita Rani (India) – New National mark in 5000 m and 5000 m at the 5th Federation Cup Championships 1999
 Vandana Rao – 1987 Arjuna Award
 Vandana Shanbagh – 1987 Arjuna Award
 100 metres:
 Ben Johnson (Canada) – World Record at 1987 – World Athletic Championships at Rome
 Carl Lewis (USA) – World's fastest sprinter – 1988 and 1984 Olympics Gold Medal (men's)

Donovan Bailey (Canada) – 1996 Olympics Gold Medal (men's)
 Gail Devers (US) – 1996 Olympics Gold Medal (women's); 1992 Olympics Gold Medal (women's)
 Linford Christie (Britain) – 1992 Olympics Gold Medal (men's)
 Liu Xiaomei (China) – 1994 Asiad Gold Medal (women's)
 Lydia de Vega (Philippines) – X Asiad Gold Medal (women's)
 Marion Jones (USA) – Athlete of the Year 1998; 1997 World Athletics Gold Medal (women's)
 Maurice Greene (USA) – 1997 World Athletics Gold Medal (men's)
 Tatal Mansoor (Qatar) – 1994 Asiad Gold Medal (men's)

110 metres Hurdles (men's):

Allen Johnson (US) – 1996 Olympics Gold Medal (men's)
 Li Tong (China) – 1994 Asiad Gold Medal
 Mark McKoy (Canada) – 1992 Olympics Gold Medal

100 metres Hurdles (women's):

Ludmila Enquist (Sweden) – 1996 Olympics Gold Medal (men's)
 Olga Chu Ichigina (Kazakhstan) – 1994 Asiad Gold Medal
 Paraskevi Patoulidou (Greece) – 1992 Olympics Gold Medal

200 metres:

Ato Boldon (Trinidad & Tobago) – 1997 World Athletics Gold Medal (men's)
 Gwen Torrence (US) – 1992 Olympics Gold Medal (women's)
 K.V. Damayanti (Sri Lanka)
 Michael Johnson (US) – 1996 Olympics Gold Medal (men's)
 Mike Marsh (US) – 1992 Olympics Gold Medal (men's)
 Maqsood Ahmed (Pakistan)
 Marie-Jose Pereic (France) – 1996 Olympics Gold Medal (women's)
 P.T. Usha (India) – X Asiad Gold Medal (women's)
 Talal Mansoor Al-Rahim (Oatar) – 1994 Asiad Gold Medal (men's)

Wang Huel-Chen (Taiwan) - 1994 Asiad Gold (women's)
Zhanna Pintushevich (Ukraine) - 1997 World Athletics Gold Medal (women's)

400 metres:

Cathy Freeman (Australia) - 1997 World Athletics Gold Medal (women's)
Ibrahim Ismail Muttah (Qatar) - 1994 Asiad Gold (men's)

Kamaljit Sandhu - India's first woman Gold Medal winner in Asiad 1970

Ma Yuqin (China) - 1994 Asiad Gold (women's)
Marie-Jose Perec (France) - 1996 Olympics Gold Medal (women's); 1992 Olympics Gold Medal (women's)

Michael Johnson (US) - 1996 Olympics Gold Medal (men's); 1997 World Athletics Gold Medal (men's)

P.T. Usha (India) - X Asiad Gold Medal (women's)

Quincy Walls (US) - 1992 Olympics Gold Medal (men's)

Rohan Pradeep (India)

400 metres Hurdles:

Deon Hemmings (Jamaica) - 1996 Olympics Gold Medal (women's)

Derrick Adkins (US) - 1996 Olympics Gold Medal (men's)

Hau Qing (China) - 1994 Asiad Gold (women's)
Kevin Young (US) - 1992 Olympics Gold Medal (men's)

M.D. Valsamma (India) - IX Asiad Gold Medal (women's), 1983 Padma Shri, 1982 Arjuna Award
P.T. Usha (India) - X Asiad Gold Medal (women's); 1985 Padma Shri, 1983 Arjuna Award, first Indian woman to reach the final of an Olympic event.

Sally Gunnell (Britain) - 1992 Olympics Gold Medal (women's)

Shunji Karube (Japan) - 1994 Asiad Gold (men's)

Stephane Diagana (France) - 1997 World Athletics Gold Medal (men's)

400 metres relay (men's)

Donovan Bailey (Canada) & his team - 1997 World Athletics Gold Medal

800 metres:

Ana Fidelia Guirot (Cuba) - 1997 World Athletics Gold Medal (women's)

Dane Kipkeeter (Denmark)
Ellen Langen (Netherlands) - 1992 Olympics Gold Medal (women's)

K.M. Beenamol (India)

Lee Jin - Il (South Korea) - 1994 Asiad Gold (men's)

Qu Yunxia (China) - 1994 Asiad Gold (women's)
Svella Maslerkova (Russia) - 1996 Olympics Gold Medal (women's)

Vebjoern Rodal (Norway) - 1996 Olympics Gold Medal (men's)

William Tanui (Kenya) - 1992 Olympics Gold Medal (men's)

Wilson Kipkeeter (Denmark) - 1997 World Athletics Gold Medal (men's)

1,500 metres:

Carla Sacramento (Portugal) - 1997 World Athletics Gold Medal (women's)

Fermin Cacho (Spain) - 1992 Olympics Gold Medal (men's)

Gulab Chand (India)

Hassiba Boulmerks (Algeria) - 1992 Olympics Gold Medal (women's)

Hicam El Guerrouj (Morocco) - 1997 World Athletics Gold Medal (men's)

Mohamed Suleiman (Qatar) - 1994 Asiad Gold (men's)

Noureddine Morceli - 1996 Olympics Gold Medal (men's)

Qu Yunxia (China) - 1994 Asiad Gold (women's)
Svella Maslerkova (Russia) - 1999 IAAF World Champion; 1996 Olympics Gold Medal (women's)

2,000 metres:

Hicham El Guerrouj (Morocco) - New World Record at 1999 Gold League

5,000 metres:

Daniel Komen (Kenya) - 1997 World Athletics Gold Medal (men's)

Dieter Baumann (Germany) - 1992 Olympics Gold Medal (men's)

Madhuri Saxena (India)

I.K. Sankar (India)

John Ngugi (Kenya) - 1988 Olympics Gold Medal (men's)

Szabo (Romania)

Venusile Niyongabo (Burundi) - 1996 Olympics Gold Medal (men's)

Wang Junxia (China) - 1996 Olympics gold Medal (women's)

10,000 metres:

Derartu Tulu (Ethiopia) – 1992 Olympics Gold Medal (women's)

Fernanda Ribeiro – 1996 Olympics Gold Medal (women's)

Haile Gebr Selassie (Ethiopia) – Athlete of the Year 1998; 1996 Olympics Gold Medal (men's) & 1997 World Athletics – Also broke his own indoor record in 3,000 metres at Karlsruhe (Germany)

Khalid Skah (Morocco) – 1992 Olympics Gold Medal (men's)

Toshinari Takaoka (Japan) – 1994 Asiad Gold Medal (men's)

Wang Junxia (China) – 1994 Asiad Gold Medal (women's)

3,000 metres Steeplechase:

Amrith Kumar (India)

Fayyad Hussain (Pakistan)

Joseph Keter (Kenya) – 1996 Olympics Gold Medal (men's)

Mathew Biri (Kenya) – 1992 Olympics Gold Medal (men's)

Sun Ripeng (China) – 1994 Asiad Gold (men's)

3,000 metres:

Elena Romanov (CIS) – 1992 Olympics Gold Medal (women's)

Discus Throw:

Beatrice Faumonia (New Zealand) – 1997 World Athletics Gold Medal (women's)

Hridayanand Singh (India)

Ilke Wyludda (Germany) – 1996 Olympics Gold Medal (women's)

Lars Riedel (Germany) – 1996 Olympics Gold Medal (men's) & 1997 World Athletics

Maritza Marten Garcia (Cuba) – 1992 Olympics Gold Medal (women's)

Min Chunfeng (China) – 1994 Asiad Gold Medal (women's)

Romas Ubartas (Lithuania) – 1992 Olympics Gold Medal (men's)

Zhang Cunbiao (China) – 1994 Asiad Gold (men's)

Shot Put:

Astrid Kumbernuss (Germany) – 1996 Olympics Gold Medal (women's) & 1997 World Athletics

Bahadur Prasad (India)

John Godina (USA) – 1997 World Athletics Gold Medal (men's)

Liu Hao (China) – 1994 Asiad Gold (men's)

Michael Stulce (US) – 1992 Olympics Gold Medal (men's)

Randy Barnes (US) – 1996 Olympics Gold Medal (men's)

Sui Xinmei (China) – 1994 Asiad Gold Medal (women's)

Suninderjit Kaur (India)

Svetlana Kriveleva (CIS) – 1992 Olympics Gold Medal (women's)

Pole Vault:

Igor Potapovich (Kazakhstan) – 1994 Asiad Gold (men's)

Jean Galfione (France) – 1996 Olympics Gold Medal (men's)

Maxim Tarassov (CIS) – 1992 Olympics Gold Medal (men's)

Sergi Bubka (Ukraine) – 1997 World Athletics Gold Medal (men's)

Javelin:

Gurmeet Kaur (India)

Heli Rantanen (Finland) – 1996 Olympics Gold Medal (women's)

Hezekiel Sepeng (South Africa) – 1999 IAAF World Champion

Jagdish Bishnoi (India)

Jan Zelezny (Czech) – 1996 Olympics Gold Medal (men's); 1992 Olympics Gold Medal (men's)

Marius Corbett (SA) – 1997 World Athletics Gold Medal (men's)

Oksana Yarygina (Uzbekistan) – 1994 Asiad Gold (women's)

Silke Renk (Germany) – 1992 Olympics Gold Medal (women's)

Trine Hattestad – 1997 World Athletics Gold Medal (women's)

Zhang Lianbio (China) – 1994 Asiad Gold (men's)

Hammer Throw:

Balazs Kiss (Hungary) – 1996 Olympics Gold Medal (men's)

Bi Zhong (China) – 1994 Asiad Gold (men's)

Andrey Abduvaliyev (CIS) – 1992 Olympics Gold Medal (men's)

Ishtiaq Ahmed (India) – New Record at 1999 Federation Cup Championships

Heinz Weis (Germany) – 1997 World Athletics Gold Medal (men's)

High Jump:

Charles Austin (US) – 1996 Olympics Gold Medal (men's)

Helke Henkel (Germany) – 1992 Olympics Gold Medal (women's)

Javier Sotomayer (Cuba) – 1997 World Athletics Gold Medal (men's); 1992 Olympics Gold Medal (men's)

Hanne Haugland (Norway) – 1997 World Athletics Gold Medal (women's)

Inga Babakova (Ukraine) – 1999 IAAF World Champion

M.V. Nagendra Prasad (India)

Rangana Parera (Sri Lanka)

Rehana Kausar (Pakistan)

Stefka Kostadinova (Bulgaria) – 1996 Olympics Gold Medal (women's)

Svetlana Mounkova (Uzbekistan) – 1994 Asiad Gold (women's)

Takahisa Yoshida (Japan) – 1994 Asiad Gold (men's)

Long Jump:

Anju Markose (India) – New Record at 1999 Federation Cup Championship (women)

Carl Lewis – 1996, 1992, 1988 and 1984 Olympics Gold Medal (men's)

Chioma Ajunwa – 1996 Olympics Gold Medal (women's)

Heike Greschler (Germany) – 1992 Olympics Gold Medal (women's)

Huang Geng (China) – 1994 Asiad Gold (men's)

Ivan Pedroso (Cuba) – 1997 World Athletics Gold Medal (men's)

Liudmila Galkina (Russia) – 1997 World Athletics Gold Medal (women's)

Mike Powell (USA) – World record holder

Yao Weili (China) – 1994 Asiad Gold (women's)

Triple Jump:

Inessa Kravets (Ukraine) – 1996 Olympics Gold Medal (men's)

Kenny Harrison (US) – 1996 Olympics Gold Medal (men's)

Mike Conley (US) – 1992 Olympics Gold Medal (men's)

Oleg Sakirkin (Kazakhstan) – 1994, Asiad Gold (men's)

Marathon:

Abel Anton (Spain) – 1997 World Athletics Gold Medal (men's)

Adriana Fernandez (Mexico)

Fatuma Roba (Ethiopia) – 1996 Olympics Gold Medal (women's)

Heikham Imoba (India) – 1999 Rath Title

Hwang Young Jo (S. Korea) – 1994 Asiad Gold, 1992 Olympics Gold Medal (men's)

Jackson Kabiga (Kenya) – Fukuoka Paris 1997

Joseph Chebet (Kenya)

Josia Thugwane (South Africa) – Olympics Gold Medal (men's) & 1997 Fa International Marathon

Naoko Takahashi (Japan) – XIII Asiad (women's)

Ringzen Angmo (India) – 1999 Rath Title

Santiago de Arango – 1998 Walt Disney Marathon

Valentina Yegorova (C.I.S.) – 1992 Olyn Gold Medal (women's)

Triathlon

Chn's Mc Cormack – 1997 World Cham (male), Emmay Carney – 1997 (female)

Decathlon:

Daley Thompson (UK) – 1980 Gold Me Olympics (men's), 1982 Commonwealth G Medal (men's), 1984 Olympics Gold Medal (men's)

Dan O'Brien (US) – 1996 Olympics Gold Me (men's)

Ramil Ganiev (Uzbekistan) – 1994 Asiad Go (men's)

Robert Zmelik (Czech.) – 1992 Olympics Go Medal (men's)

Thomas Dvorak (Czech) – 1997 World Athletic Gold Medal (men's)

Heptathlon:

Ghada Shouaa (Syria) – 1996 Olympics Gold Medal (women's); 1994 Asiad Gold (women's)

Jackie Joyner-Kersey (USA) – 1992 and 1988 Olympics Gold Medal and World Record (women's)

10-kilometre Walk:

Chen Yueling (China) – 1992 Olympics Gold Medal (women's)

Gao Hongmiao (China) – 1994 Asiad Gold (women's)

Yelena Nikolayeva (Russia) – 1996 Olympics Gold Medal (women's)

20-km Walk:

Chand Ram (India) – IX Asiad Gold Medal, 1983 Padma Shri, 1982 Arjuna Award

Chen Shaoguo (China) – 1994 Asiad Gold (men's)

Daniel Garcia (Mexico) – 1997 World Athletics Gold Medal (men's)

Daniel Plaza Moniero (Spain) – 1992 Olympics Gold Medal (men's)

Jefferson Perez (Ecuador) – 1996 Olympics Gold Medal (men's)

50-km Walk:
 Andre Perlov (CIS) - 1992 Olympics Gold Medal (men's)
 Robert Korzeniowski (Poland) - 1996 Olympics Gold Medal (men's)
 Serguel Korepanov (Kazakhstan) - 1994 Asiad Gold (men's)

BADMINTON

Alan Budi Kusuma (Indonesia) - 1992 Olympics Gold Medal (men's)
 Ami Ghia (Railways) - 1976 Arjuna Award
 Apama Popet (India)
 Ardy Wiranata (China)
 Arun Baidya (India) - 1999 All India Junior Grand Prix Tournament Title
 Bandin Jayen (Indonesia)
 Bang Soo-Hyun (South Korea) - 1996 Olympics Gold Medal (women's)
 Camilla Martin (Denmark) - 1999 Danish Open (women)
 Chen Gang (China) - 1999 French Open Champion (men)
 Emiko Ueno (Japan)
 Etsuko Toganoo (Japan)
 Flemming Delfs (Denmark)
 Frost Hansen (Denmark)
 Fu Kok Kyong (Malaysia)
 Gillian Gilks (U.K.)
 Han Jiang (China)
 Hastomo Arbi (Indonesia)
 Helen Troke (U.K.)
 Heryanto Arbi
 Icuk Sugianto (Indonesia)
 Illie Sumirat (Indonesia)
 Jalani Sidek (Malaysia)
 Jens Peter Nierhoff (Denmark)
 Joko Suprianto
 Kirsten Larsen (Denmark)
 L.D'Sa (Railways)
 Latha Kailash (Universities)
 Lene Koeppen (Denmark)
 Li Lingwei (China)
 Liang Chiu-hsia (China)
 Lius Pongoh (Indonesia)
 Luan Chin (China)
 M. Tsuchida (Japan)
 Madhumita Bisht (Railways)
 Maureen D'Souza (Railways)
 Morten Frost (Denmark)
 Nick Yates (U.K.)
 Nikhil Kanetkar (India)
 P. Gopichand (India)
 P.G. Chengappa (Kerala)

Partho Ganguli (Madhya Pradesh)-1982 Arjuna Award
 Peter Rasmussen (Denmark)
 Poul-Erik Hoyer Larsen (Denmark) - 1999 Danish Open; 1996 Olympics Gold Medal (men's)
 Prakash Padukone (Karnataka)-1981 World Cup, 1980 All-England, 1981 India Masters and 1979 World Masters Champion, 1972 Arjuna Award, XI Commonwealth Games Gold Medal
 Radhika Bose (Maharashtra)
 Razif Sidek (Malaysia)
 Rinji Zenia (Japan)
 Sang Hee Yoo (South Korea)
 Steve Baddeley (U.K.)
 Sun Ah Hwang (South Korea)
 Sun Jun (China) - 1999 World Champion
 Susi Susanti (Indonesia) - 1992 Olympics Gold Medal (women's)
 Sylvia Ng (Malaysia)
 Vimal Kumar (Karnataka)
 Wendy Poulton (England)
 Wu Jianqui (China)
 Xia Xuanze (China) - 1999 Yonex German Open
 Yang Yang (China)
 Ye Zhaoying (China)
 Yu Yaotung (China)
 Zhang Ailing (China)
 Zhou Mi (China) - 1999 French Open Champion (women)

BALL BADMINTON

A. Sam Christ Das (India)
 A. Karim (India)
 D. Rajaram (India)
 L. A. Iqbal (India)

BASKETBALL

Ajmer Singh (India)
 Anil Kumar Punj (India)
 Brian Kelleybrew (Australia)
 Hanuman Singh (India)
 Om Prakash (India)
 Radhey Shyam (India)
 Sean Kemp (USA)
 Suman Sharma (India)
 Surendra Kumar Katana (India)
 T. Vijayaraghavan (India)

BILLIARDS

Ashok Shandilya (India) - XIII Asiad Gold Medal
 Bob Close (England)
 Bob Marshall (Australia)
 Geet Sethi (India) - 1999 World Matchplay Champion; XIII Asiad Gold Medal (Doubles); 1986 Padma Shri; 1985 Arjuna Award

Girish Parikh
 Joe Grech (Malta)
 Leslis Driffeld
 Manoj Kothari
 Michael Ferreira – 1982 and 1983 World
 Amateur Title
 Mike Russell (England) – 1998 Riley Northern
 Open International Champion
 Norman Dagley
 Shyam Shroff
 Subhash Agarwal
 Wilson Jones – 1996 Dronacharya Award
 Yasin Merchant – 1989 Arjuna Award

BODY BUILDING

T.V. Pauly (India) – 1998 Arjuna Award

BOWLING

Christian Nokel (Germany) & Su Feng Tseng
 (Taiwan) – 1997 World Cup Amateur Bowling
 Champions
 Hiroshi Yamamoto (Japan) – 1994 Asiad Gold
 (men's)
 Lee Ji-Yeon (South Korea) – 1994 Asiad Gold
 (women's)

BOXING

Allredo Evangelista (Spain)
 Alisher Avezbaev (Uzbekistan) – 1994 Asiad
 Gold (Heavy Weight)
 Ariel Hernandez (Cuba) – 1996 Olympics Gold
 Medal (Middle Weight)
 Azumah Nelson (Ghana)
 Bernard Hopkins (USA) – Winner of 1997
 International Boxing Federation title
 Bong Gil Cho (North Korea)
 Chang Jung-Koo (South Korea)
 Edwin Rosario (Puerto Rico)
 Evander Holyfield – 1997 IBF Heavyweight
 Champion
 Fabrice Tiozzo (France) – 1999 World
 Association Cruiserweight Champion
 Felix Savon (Cuba) – 1997 World Amateur
 Boxing Championship; 1996 Olympics Gold Medal
 (Heavy Weight); Winner of 1992 Olympics Gold
 Medal (Heavy Weight)
 Fidel Bassa (Columbia)
 Frank Bruno (UK)
 Giovanni Parisi – 1997 WBO Super Lightweight
 Champion
 Gurbax Singh Sandhu – 1998 Dronacharya
 Award
 Hussein Khalil (Kenya)
 Ibrahim Bilali (Kenya)

Istvan Kovacs (Hungary) – 1996 Olympics
 Gold Medal (Bantam Weight)
 J.V. Jollyron (India)
 Jitender Kumar (India)
 Joe Orewa (Nigeria)
 John Conteh (UK)
 Kaur Singh (India) 1982 Arjuna Award
 Larry Holmes (USA)
 Laurent Boudouani (France) – 1998 WBA Super
 Welterweight World Champion
 Lennox Lewis (UK) – 1999 World Heavyweight
 Champion
 Leon Spinks (USA)
 Manoj D. Pingle – 1993 Arjuna Award
 Michael Mutua (Kenya)
 Mike Tyson (USA) – 1999 Heavyweight
 Champion
 Mike Weaver (USA)
 Mohd. Ali Qamar (India)
 Muhammad Ali (USA)
 Mukund Kilekar – 1993 Arjuna Award
 N.G. Dingko Singh – 1999 National
 Bantamweight Champion; 1998 Arjuna Award; XIII
 Asiad Gold Medal
 Narendra Rana (India)
 Oleg Mascaev (Uzbekistan) – 1994 Asiad Gold
 (Super Heavy Weight)
 Oleg Saitov (Russia) – 1996 Olympics Gold
 Medal (Welter Weight)
 Peter Konyegwachile (Nigeria)
 Richard Dunn (UK)
 Roberto Balado (Cuba) – 1992 Olympics Gold
 Medal (Super Heavy Weight)
 Shannon Briggs – 1997 World Heavyweight
 Champion
 Sharmba Mitchell (USA) – 1999 World
 Association Super Lightweight Champion
 Somluck Kamsing (Thailand) – 1996 Olympics
 Gold Medal (Feather Weight)
 V. Devarajan – 1995 Arjuna Award
 Victor Galinpey (Argentina)
 Vladimir Klichko (Ukraine) – 1996 Olympics
 Gold Medal (Super Heavy)
 Wilfredo Gomez (Puerto Rico)

BRIDGE

Jaggy Shivdasani (Maharashtra)
 Jimmy Mehra (Maharashtra)

CARROM

Anthony Maria Irudayam – 1996 Arjuna Award

CHESS

Aarthie Ramaswamy (India) – 1999 World
 Youth Festival Title

Alexander Gatkin (Russia) – 1999 World Junior Champion
 Alexander Khalifman (Russia) – 1999 FIDE World Champion
 Anand Kumar Ghosh (West Bengal)
 Anatoly Karpov
 Anupama Abhyankar (Maharashtra)
 Anupama Gokhale – 1990 Arjuna Award
 Atanu Lahiri (India) – 1999 Commonwealth Champion
 Bashar Kouwlaty (Lebanon)
 Boris Spassky
 Dibyendu Barua (West Bengal) – 1983 Arjuna Award
 Garry Kasparov (Russia) – 1999 Siemens Giants Rapid Tournament Title and 1999 Hoogovens International Grandmasters Title
 Hukum Chand (Punjab)
 Jayashree Khadilkar
 Josef Dorfman
 Kalika Prasad (U.P.)
 Koneru Humpy (India) – Winner of 1997 World's under-10 Girls' Chess Championship
 Krishnan Sasikiran (India) – 1999 Asian Junior Champion
 Manual Aaron (Tamil Nadu)
 Maria Kouvetsou (Greece) – 1999 World Junior Champion (women)
 Maya Chiburdanidze
 Mohammad Hussan (Andhra Pradesh)
 N. Sudhakar Babu
 Nasir Wajih
 R. Sudhakar Babu
 Raja Ravi Shekhar (Tamil Nadu)
 Ravi Kumar (Tamil Nadu)
 S.V. Natarajan (Tamil Nadu)
 Surya Shekhar Ganguly (India) – 1999 National 'B' Champion
 T.N. Parameswaran (Tamil Nadu)
 Vassanti Khadilkar
 Viswanathan Anand (India) – Topper in World Rapid Ranking 1999; 1998 Wydra Memorial Tournament; 1985 Arjuna Award and International Grand Master and winner of 1997 Credit Suisse International Grand Masters Chess Tournament
 Vladimir Kramnik (Russia)
 Vlastimil Hort (Czechoslovakia)

CRICKET

Abdur Razaq (Pakistan)
 Adam Gilchrist (Australia)
 Ajay Jadeja

Ajit Agarkar
 Alistair Campbell (Zimbabwe)
 Allan Border (Australia)
 Allan Donald (South Africa)
 Amay Khurasia
 Andy Flower (Zimbabwe)
 Andy Whittal (Zimbabwe)
 Anil Kumble – 10 wickets in an Innings; 1995 Arjuna Award
 Arjuna Ranatunga (Sri Lanka)
 Aravinda de Silva (Sri Lanka)
 Asif Karim (Kenya)
 Azhar Mahmood (Pakistan)
 B.S. Chandrasekhar
 Bishan Singh Bedi
 Brian Lara (West Indies)
 Chetan Sharma (India) – Hat-trick of the World Cup
 Chris Cairns (New Zealand)
 Clive Lloyd (West Indies)
 Craig McMillan (New Zealand)
 Curtly Ambrose (West Indies)
 Damien Fleming (Australia)
 Debasish Mohanty
 Deepa Chudasama (Kenya)
 Devang Gandhi
 Diana Edulji
 Dilip Vengsarkar
 Duleep Mendis (Sri Lanka)
 E.A.S. Prasanna
 G.R. Vishwanath
 Gary Kirsten (South Africa)
 Geoff Allott (New Zealand)
 Glenn McGrath (Australia)
 Graeme Hick (England)
 Graham Gooch (England)
 Graham Thorpe (England)
 Grant Flower (Zimbabwe)
 Hansie Cronje (South Africa)
 Herschelle Gibbs (South Africa)
 Hitesh Modi (Kenya)
 Ian Botham (England)
 Ian Chappell (Australia)
 Ijaz Ahmed (Pakistan)
 Imran Khan (Pakistan)
 Inzamam-ul-Haq (Pakistan)
 Jacques Kallis (South Africa) – Best Cricketer of the year 1999
 Javagal Srinath – 1996 Arjuna Award
 Javed Miandad (Pakistan)
 John Traicos (Zimbabwe)
 Jonty Rhodes (South Africa)
 Joseph Angara (Kenya)

Kapil Dev (India)
 Keith Artherton (West Indies)
 Kiran More - 1993 Arjuna Award
 Krishnamachari Srikkanth
 Lance Klusener (South Africa)
 M S K Prasad
 Madan Lal - 1989 Arjuna Award
 Manoj Prabhakar - 1993 Arjuna Award
 Mark Boucher (South Africa) - Highest scoring
 night-watchman in Test History
 Mark Waugh (Australia)
 Martin Suji (Kenya)
 Marvan Atapattu (Sri Lanka)
 Matthew Hart (New Zealand)
 Maurice Odumbe (Kenya)
 Michael Bevan (Australia)
 Michael Holding (West Indies)
 Mike Atherton (England)
 Mohammad Azharuddin - 1986 Arjuna Award
 Mohinder Amarnath
 Moin Khan (Pakistan)
 Mushtaq Ahmed (Pakistan)
 Muthiah Muralitharan (Sri Lanka)
 Narendra Hirwani (India) - 16 wickets in Test
 debut
 Nathan Astle (New Zealand)
 Nayan Mongia - 1998 Arjuna Award
 Neil Fairbrother (England)
 Neil Johnson (Zimbabwe) - Cent Cricketer of
 the 1999 World Cup
 Nikhil Chopra
 Rahul Dravid - Cent Cricketer of the 1999
 World Cup 1998, Arjuna Award and 1996-97
 Pantaloons Indian Cricketer
 Ricardo Powell (West Indies)
 Richard Hadlee (New Zealand)
 Ravi Shastri - Six sixes in an over
 Robin Singh
 Roger Binny (India) - Juniors Coach
 Roshan Mahanama (Sri Lanka)
 S. Chandrapaul (West Indies)
 Sachin Tendulkar (India) - World Record of 24
 Centuries in One-dayers; 1997-98 Rajiv Gandhi
 Khel Ratna Award
 Sadagopan Ramesh
 Saeed Anwar (Pakistan)
 Salim Malik (Pakistan)
 Sanath Jayasuriya (Sri Lanka)
 Sanjay Manjrekar
 Saqlain Mushtaq - Hat-Trick in World Cup 1999
 Saurav Ganguly
 Shane Warne (Australia)
 Shantha Rangaswami - 1976 Arjuna Award
 Shaun Pollock (South Africa)
 Sherwin Campbell (West Indies)
 Simon Doull (New Zealand)

Stephen Fleming (New Zealand)
 Steve Tikolo (Kenya) - Cent Cricketer of the
 1999 World Cup
 Steve Waugh (Australia)
 Stuart Williams (West Indies)
 Sultan Zarwani (UAE)
 Sunil Joshi
 Sunil Gavaskar - Padma Bhushan; 1975
 Arjuna Award
 Syed Kimani - 1979-80 Arjuna Award
 Tom Moody (Australia)
 Tony Greig (England)
 Venkatesh Prasad
 Vijay Bhadrawaj
 Vinod Kambli
 Vivian Richards (West Indies)
 Waqar Younis (Pakistan)
 Wasim Akram (Pakistan)
 Zaheer Abbas (Pakistan)

CYCLING

Clause Criquillon (Belgium)
 Erika Salumae (Estonia) - 1992 Olympics Gold
 Medal (women's sprint)
 Felicia Ballanger (France) - 1996 Olympics
 Gold Medal (women's sprint)
 Jasmine Arethna (Maharashtra)
 Jeannie Longo - Ciprelli (France) - 1996
 Olympics Gold Medal (women's road race)
 Jens Fiedler (Germany) - 1992 Olympics Gold
 Medal (men's sprint)
 Laurent Blondi (France)
 Marco Pantani (Italy)
 Miguel Indurain (Spain) - 1996 Olympics Gold
 Medal (men's individual trial)
 Pascal Richard (Switzerland) - 1996 Olympics
 Gold Medal (men's road race)
 Toshinobu Saito (Japan) - 1994 Asiad Gold
 (men's sprint)
 Wang Yan (China) - 1994 Asiad Gold (women's
 sprint)

EQUESTRIAN

Fateh Khan (Pakistan)
 Gamela-al-Mutawa (Kuwait)
 Isabellwerth On Gigo (Germany) - 1996
 Olympics Gold Medal
 Konoshin Kuwahara (Japan) - 1994 Asiad
 Gold
 Ludger Beerbaum (Germany) - 1992 Olympics
 Gold Medal
 Nadia-al-Mutawa (Kuwait)
 Nicole Uphoff (Germany) - 1992 Olympics Gold
 Medal
 Mukalaf A. Mahdi (Iraq)

FENCING

Alessandro Puccini (Italy) – 1996 Olympics
 Id Medal (men's individual foil)
 Giovanna Trilini (Italy) – 1992 Olympics Gold
 dal (women's foil)
 Laura Badea (Romania) – 1996 Olympics Gold
 dal (women's individual foil)
 Philippe Omnes (France) – 1992 Olympics Gold
 dal (men's foil)
 Xu Xuening (China) – 1994 Asiad Gold (men's
)

FOOTBALL

Adam Nawalka (Poland)
 Amaral (Brazil)
 Baichung Bhutia – Player of 1999 SAFF Coca-
 Cola Cup Tournament and 1998 Arjuna Award
 Basudev Mondal (India)
 Batista (Brazil)
 Berti Vogts (West Germany)
 Chuni Goswami
 Emerson Leao (Brazil)
 Hardeep Sangla (India)
 I M Vijayan (India)
 Inder Singh – 1965 Arjuna Award
 Jo Paul Anchery (India)
 Lothar Matthaus (Germany – German
 otballer of the Year 1998-99
 Mario Kempes (Argentina)
 Mohammad Habib – 1980-81 Arjuna Award
 Mukhtar Dahri (Malaysia)
 Mustapha Hadji (Morocco) – African Player of
 a year 1998
 Oguchi Onyewu (USA)
 Pablo Gonzalez (Spain)
 Paolo Rossi (Italy)
 Pele (Brazil) – South American Footballer of
 a Century
 Prasun Banerjee – 1979-80 Arjuna Award
 Raman Vijayan (India)
 Roberto Fernandez (India)
 Ronaldo (Brazil) – FIFA's World Player and
 uropean Player of the Year* 1997
 Shah Ismail (Maldives)
 Shanti Malik – 1983 Arjuna Award
 Subroto Bhattacharjee – 1989 Arjuna Award
 Sudhir Karmarkar – 1981 Arjuna Award
 Syed Sabir Pasha (India)
 Virender Singh (India)
 Zinedine Zidane (France) – FIFA World Player
 the Year 1998

GOLF

Alan Singh
 Ali Shar (India)
 Amritinder Singh (India)
 Annika Sorenstam (Sweden)
 Arjun Atwal – 1999 Indian Open Champion
 Amandeep Jhli (India)
 Ben Crenshaw (USA)
 Brian Jones (Australia)
 Chiranjeev Mishra Singh (India) – 1999 Lexus
 International Title
 Colin Montgomerie (UK)
 Darren Clarke (UK)
 David Duval (USA)
 Fiona Pike (Australia)
 Graham Mars (Australia)
 Greg Norman (Australia)
 Hal Sutton (USA) – 1998 PGA Tour Champion
 Harji Malik
 Jean Van Develde (France)
 Johnny Miller (USA)
 Juli Inkster – 1993 World Champion (women)
 Jyoti Randhawa (India) – Hero Honda Master
 Trophy 1998
 Kenny Druce (Australia) – 1999 Nokia
 Singapore Open
 Nonita Lal – 1997 Arjuna Award
 Podraig Harrington & Paul McGinlay (Ireland) –
 Winners of 1997 World Cup Golf
 Rajiv Mohla
 Robert Karlsson (Sweden)
 Sergio Garcia (Spain)
 Sheilah Wright (Kenya)
 Sherri Steinhaur (USA) – 1999 British Open
 Champion
 Shruti Khanna (India) – 1999 AVT Thomas
 Trophy
 Simram Singh
 Thammanoon Sriroj (Thailand) – 1999 Tianjin
 Teda Open
 Tiger Woods – 1999 NEC Invitational World
 Champion, 1999 PGA Champion and 1999
 European Champion
 Vijay Kumar (India) – Mahindra Golfer of the
 Year 1999

GYMNASTICS

Alexandre Timoshenko (CIS) – 1992 Olympics
 Gold Medal (men's)
 Alexei Namov (Russia) – 1996 Olympics Gold
 Medal (men's vault)
 Biplab Bhattacharjee (Bangladesh)
 Binod Kharel (Nepal)

Choe Jong Sil (North Korea)
 Gao Ya (China) – 1994 Asiad Gold (women's all round)
 Kumar Thapa (Nepal)
 Lavinia Milosovici (Romania) – 1992 Olympics Gold Medal (women's)
 Lilia Podkopyayeva (Ukraine) – 1996 Olympics Gold Medal (women's allround)
 Li Qulling (China)
 Li Xiaoshuang (China) – 1994 Asiad Gold (men's) all round
 Ioannis Melissanidis (Greece) – 1996 Olympics Gold Medal (Men's Floor Exercises)
 M.S. Anju Dua – 1998 Arjuna Award (Physical Handicapped Category)
 Nazrul Islam (Bangladesh)
 Shannon Miller (US) – 1996 Olympics Gold Medal (women's balance beam)
 Sundary Mandal (India) – 1999 Federation Cup Champion (women)
 Sunil Tuladhar (Nepal)
 Sunila Sharma – 1985 Arjuna Award
 Tatyana Gutsu (CIS) – 1992 Olympics Gold Medal (women's)
 Vikas Pandey (India) – 1999 Federation Cup Champion
 Wu Jian (China)
 Xiaosa Huang (China) – 1992 Olympics Gold Medal (men's)

HOCKEY

A.B. Subblah & Ashish Ballai – 1996 Arjuna Award
 Ajitpal Singh–Captain, 1975 World Cup team, 1976 Olympics team
 Akhtar Rasool (Pakistan)
 Alan Hobackirke (Canada)
 Anurag Raghuvansi (India)
 Baldev Singh – 1998 Arjuna Award
 Baljit Singh Chandi (India)
 Baljit Singh Dhillon – 1998 Arjuna Award
 Baljit Singh Saini (India)
 Bimalakra (India)
 Deepak Thakur (India)
 Dhanraj Pillay – 1995 Arjuna Award
 Dhyani Chand
 Dilip Tirkey (India)
 Dinesh Nayak (India)
 Gagan Ajit Singh (India)
 Istahuddin (Pakistan)
 Jagbir Singh – 1990 Arjuna Award

Jaime Arbos (Spain)
 Jaun Amat (Spain)
 Jude Felix – 1994 Arjuna Award
 Jude Menzes (India)
 M. Sommayya
 M.K. Kaushik – 1998 Arjuna Award
 Miss Rupa Saini
 Mohammad Riaz – 1998 Arjuna Award
 Mohammad Shahid
 Mukesh Kumar – 1995 Arjuna Award
 Pargat Singh
 Paul Litjens (Holland)
 Prithpal Singh
 R.V.S. Prasad (India)
 Ramandeep Singh (India)
 Richard Charlesworth (Australia)
 Ron Steen (Holland)
 S.S. Gill (India)
 Samir Dad (India)
 Senthil (India)
 Shamsuz Zoha (India)
 Surjeet Singh – 1998 Arjuna Award (Posthumously)
 Thirumalvalvan (India)
 V.J. Philips – Captain, 1978 World Cup team
 Zalar Iqbal –1983 Arjuna Award

JUDO

Cawas Kersep Bilimoria – 1993 Arjuna Award
 Cho Min-Sun – 1996 Olympics Gold Medal (women's middle weight)
 David Khakhalechvili (C.I.S.) – 1992 Olympics Gold Medal (men's heavy weight)
 JeonKi-Young – 1996 Olympics Gold Medal (men's middle weight)
 Katsuyuki Masochi (Japan) – 1994 Asiad Gold (men's)
 Kenzo Nakamura (Japan) – 1996 Olympics Gold Medal (men's light weight)
 Kye Sun (N. Korea) – 1996 Olympics Gold Medal (women's extra light weight)
 Narender Singh – 1998 Arjuna Award
 Nariko Annu (Japan) – 1994 Asiad Gold (women's)
 Pawel Nastula (Poland) – 1996 Olympics Gold Medal (men's half heavy weight)
 Poonam Chopra – 1996 Arjuna Award
 Ulla Werbrouck (Belgium) – 1996 Olympics Gold Medal (women's half heavy weight)
 Zhuang Xiaoyan (China) – 1992 Olympics Gold Medal (women's heavy weight)

KABADDI

Ashan Kumar – 1998 Arjuna Award
Ashok D. Shinde – 1994 Arjuna Award
Biswajit Palit – 1998 Arjuna Award
Hardeep Singh – 1990 Arjuna Award
P. Ganeshan – 1995 Arjuna Award
S. Rajaratnam – 1994 Arjuna Award

KHO-KHO

D.S. Ramchandra
Hemant Mohan Takalkar – 1981 Arjuna Award
Miss Usha Vasant Nagarkar
Nilima Chandrakant Sarolkar
S. Prakash
Shantaram Jadhav
Shoba Narayan (India) – 1998 Arjuna Award
Srirang Janardhan Inamdar
Surekha Bhagwan Kulkarni
Sushma Sarolkar

MOUNTAINEERING

Bachendri Pal – 1984 Padma Shri, 1984 Arjuna Award
Chandraprabha Aitwal – 1981 Arjuna Award
Col. B.S. Sandhu – 1981 Arjuna Award
Col. D.K. Khullar – 1984 Padma Shri, 1984 Arjuna Award
Col. N. Kumar
Harshwanti Bisht
Maj. H.P.S. Ahluwalia
Maj. Prem Chand
Mrs. Junko Tabei
Naik N.D. Sherpa
Phu Dorjee – 1985 Arjuna Award, 1984 Padma Shri
Rekha Sharma
Santosh Yadav
Sir Edmund Hillary
Tenzing Norgay

POLO

Angad Kalaan (India)
Lt. Col. Kuldip Singh Garcha
Naveen Jindal (India)
Ramiro Garros (Argentina)
Samir Suhag (India)
Vishal Singh (India)

ROWING

Cao Mianying (China) – 1994 Asiad Gold (women's)
Elisabela Lipa (Romania) – 1992 Olympics Gold Medal (women's)

Huang Xiaoping (China) – 1994 Asiad Gold (men's)

Major R.S. Bhanwala – 1994 Arjuna Award
Surinder Singh Waldia – 1996 Arjuna Award
Thomas Lanje (Germany) – 1992 Olympics Gold Medal (men's)

Xeno Mueller (Switzerland) – 1996 Olympics Gold Medal (men's)

Yekaterina Khodotovich (Belgium) – 1996 Olympics Gold Medal (women's)

SAILING

Lt. Cdr. R. Mahesh (India)
Nitil Mongla (India) – 1999 BPL National Champion
Rajesh Choudhary (India)
Soma Pradhyuma (India)

SHOOTING

Anja Tere (India)
Anjali Ved Pathak (India)
Ashok J. Pandit – XII Asiad Gold, 1985 Arjuna Award
Ashok Pandit (India)
Boris Kokorev (Russia) – 1996 Olympics Gold Medal (men's 50 m free pistol)
Cho Eun – Young (South Korea) 1994 Asiad Gold (women's)
Dr. Kamal Singh
Deoka Ha Yoon (South Korea)
Gil Man Fo (North Korea)
Jaspal Rana – XII Asiad (Gold), 15th Commonwealth (Gold), 1994 Arjuna Award
Kasumi Watanabe (Japan)
Kim Rhode (US) – 1996 Olympics Gold Medal (Women's Double trap)
Kuheli Gangulee (India)
Maj. R.K. Vij
Manavjit Singh – 1998 Arjuna Award
Mansher Singh – XII Asiad Gold, 1993 Arjuna Award
Marina Logvineko (C.I.S.) – 1992 Olympics Gold Medal (women's)
Michael Diamond (Austria) – 1996 Olympics Gold Medal (men's trap)
Moraad Ali Khan – 1996 Arjuna Award
Olga Kiochneva (Russia) – 1996 Olympics Gold Medal (women's air rifle)
Park Jong Gil (South Korea)
Ralf Schulmann (Germany) – 1996 Olympics Gold Medal (men's 25m rapid fire pistol), 1992 Olympics Gold Medal (men's)

Renata Mauer (Poland) – 1996 Olympics Gold Medal (women's Air Pistol)

Roberto di Donna (Italy) – 1996 Olympics Gold Medal (men's air pistol)

Roopa Unnikrishnan – 1998 Arjuna Award and 16th Commonwealth Games Gold Medal (1998)

Ryohel Koba (Japan) – 1994 Asiad Gold (men's)

Subhash Rana (India)

Sushma Rana (India)

Ved Prakash (India)

Wang Yifu (China)

SQUASH

Cassie Campion (England) – 1999 Phil Smart Mercedes Benz Women's Open

Chris Walker & Mark Calms (UK) – Winners of 1997 men's doubles World Squash Championship

Dan Jensen & Liz Irving (Australia) – Winners of 1997 Mixed Doubles World Squash Championship

Jonathon Power (Canada)

Meharwan Daruwala – 1990 Arjuna Award

Peter Nicole (UK) – 1999 World Open Champion

Rodney Eyles (Australia) – Winner of 1997 World Squash Open

SNOOKER

Ashwini Purani (India) – 1999 All India Champion (women)

Stephen Hendry (Scotland) – 1999 Embassy World Professional Champion

SWIMMING

Aleksander Popov (Russia) – 1996 Olympics Gold Medal (men's 100m freestyle)

Anita Sood (Maharashtra)

Anne Ottenbrite

Arati Saha

Arati Pradhan

Baidyanath Nath

Bhanu Sachdeva – 1998 Arjuna Award

Bula Chowdhury (West Bengal) – First Asian Women to cross the English Channel twice and 1990 Arjuna Award

Cameron Hennings (Canada)

Cathy Bald (Canada)

Chandler (USA)

Chen Ting (Taipei)

Claudia Poll (Costa Rica) – 1996 Olympics Gold Medal (women's 200 m freestyle)

Comelia Ender (erstwhile GDR)

Dan Thompson (Canada)

Danyon Loader (New Zealand) – 1996 Olympic Gold Medal (men's 200 m. & 400 m. free style)

David Wilkie (UK)

Evgeny Sadovyi (CIS) – 1992 Olympics Gold Medal (men's)

Fiang Ching Yao (Taipei)

Frederik Deburghgraeve (Belgium) – US Open 1998 World Short Course record holder in 100 breaststroke, 1996 Olympic champion, World record holder in the long-course 100 breaststroke

Fu Mingxia (China) – 1996 Olympics Gold Medal (women's diving springboard)

Graham Smith (Canada)

Hiroko Nagasaki (Japan)

Huang Chien Chih (Taipei)

Huang Chih Yung (Taipei)

Hui Tong (China)

Ikuhiro Terashima (Japan)

Jin Montgomery (USA)

John Naber (USA)

June Croll (UK)

Kaori Yanase (Japan)

Kenji Ikeda (Japan)

Khazan Singh

Kieren Perkins (Australia) – 1996 Olympic Gold Medal (men's 1500 m. freestyle)

Kimihiko Anzai (Japan)

Kon Kay (Hong Kong)

Krisztina Egerszegi (Hungary) – 1992 Olympic Gold Medal (women's)

Le Jingyi (China) – 1996 Olympics Gold Medal (women's 100 m freestyle)

Lisa Curry (Australia)

Lorraine Verghese (Karnataka)

Lt. Col. H.S. Sodhi

Lu Bin (China) – 1994 Asiad Gold (women's)

M. Usha (India) – 2 Gold Medals at 1999 Asian Pacific Swimming and Diving Championships

Manna Koshevala (erstwhile USSR)

Mark Edward Lenz (US) – 1992 Olympics Gold Medal (men's)

Michelle Ford (Australia)

Michelle Smith (Ireland) – 1996 Olympics Gold Medal (women's 400 m freestyle and individual medley)

Mihir Sen

Mok Wing Yan (Hong Kong)

Neil Brooks (Australia)

Nisha Millet (India) – A record 14 Gold Medals at Fifth National Games 1999. Best Sportswoman of 5th National Games

Peng Siong (China)
 Petra Thumer (erstwhile GDR)
 Phil Hubble (UK)
 Rakhi Mehra (India)
 Reza Shirazi (Maharashtra)
 Runcheng Ye (China)
 Sebastian Xavier - 7 Gold Medals at Fifth National Games 1999 and Best Sportsman of the 5th National Games
 Suchart Pichi (Thailand)
 Taihei Saka (Japan)
 Tom Dolan (US) - 1996 Olympics Gold Medal (Men's 400 m. individual medley)
 Tsai Hlu Wai (Hong Kong)
 V. Kutraleeswaran - 1996 Arjuna Award
 Valerie Beddoe (Australia)
 William Wilson (Philippines)
 Wilson Cherian (Kerala)
 Xiaong Guoming (China) - 1994 Asiad Gold (men's)
 Xiong Ni (China) - 1996 Olympics Gold Medal (men's diving spring board)
 Yang Shun Chi (Taipei)
 Yang Wenyi (China) - 1992 Olympics Gold Medal (women's)
 Yinua Li (China)
 Young Hee Choi (South Korea)
 Zeba Wadia (India)

TABLE TENNIS

Andy Barden (U.K.)
 Anindita Chakraborty (India)
 Arup Basak (India)
 Asim Qureshi (Pakistan)
 Cao Yanhua (China)
 Chang Li (China)
 Chen Xinhua (China)
 Chelan Baboor (India)
 Chire Koyama (Japan) - 1994 Asiad Gold (women's singles)
 Deng Yaping (China) - 1996 Olympics Gold Medal (women's); 1992 Olympics Gold Medal (women's)
 Desmond Douglas (U.K.)
 Geeta Thadani (Delhi)
 Ghazal Roohi (Pakistan)
 Guo Yuehua (China)
 He Zhili (China)
 Indu Pur (Railways)
 Istvan Jonyer (Hungary)
 Jacques Secretin (France)
 Jagannath (Railways)
 Jan-Ove Waldner (Sweden) - 1992 Olympics Gold Medal (men's)

Jiang Jialiang (China)
 Kamlesh Mehta (Maharashtra) - 1985 Arjuna Award
 Kim Jung Hoon (Korea)
 Kim Wan (South Korea)
 Kishikawa Issei (Japan)
 Kuang Li (Hong Kong)
 Liu Guoliang - 1996 Olympics Gold Medal (men's)
 Manjit Dua (Railways)
 Manmeet Singh - 1990 Arjuna Award
 Mantoo Ghosh (West Bengal)
 Milanri Oowsky (Hungary)
 Mitsuru Kohno (Japan)
 N.R. Indu (India)
 Nandini Kulkarni (Railways)
 Pak Yung Sun (North Korea)
 Poulomi Ghatak (India)
 Prabhan Saikia (India)
 Ranil Tharaka Madihahewa (Sri Lanka)
 Rinku Gupta (M.P.)
 Rita Jain (M.P.)
 Ryu Seung Min (Korea)
 S. Ramani (India)
 Sakamoto Ryusuke (Japan)
 Siu Ying Chang (Hong Kong)
 Smita Desai
 Soumyadeep Roy (India)
 Srinivasan Sriram (Railways)
 Subhajit Saha (India)
 Subramaniam Raman (India) - 1998 Arjuna Award
 Sudhir Phadke
 Sujay Ghorpade (Maharashtra)
 Tang Pang (China)
 Tibor Klamper (Hungary)
 Tomita (Japan)
 Ug Bengtsson
 V. Chandrasekhar (Tamil Nadu)
 Varsha Chulan (Maharashtra)
 Vilas Menon (Railways)
 Vyoma Parikh (Maharashtra)
 Wang Mao (China)
 Wang Tao (China) - 1994 Asiad Gold (men's singles)
 Xie Saike (China)
 Yangzom Tshering (Bhutan)
 Yoon Jae Young (Korea)
 Zhang Li (China)

TAEKWONDO

Ashok Kumar Lama (Nepal)
 B.L.N. Murthy (India)

Babar Baig Mirza (Pakistan)
 Bandana Shrestha (India)
 G. Mallini (India)
 Kamal Bahadur Chettri (Nepal)
 P. Manjula (India)

TENNIS

Anand Amritraj – 1985 Arjuna Award
 Anders Jarryd (Sweden)
 Andre Agassi (US) – 1999 French Open, 1999 US Open, Fifth tennis player to win all four Grand Slam Titles and 1996 Olympics Gold Medal (men's)

Andres Gomez (Ecuador)
 Anu Peshawaria
 Arantxa Sanchez Vicario (Spain)
 Arthur Ashe (USA)
 Betty Stove (Holland)
 Bjorn Borg (Sweden)
 Boris Becker (Germany)
 Carlos Moya (Spain)
 Cedric Pioline (France)
 Chiradeep Mukherjee
 Chris Evert Lloyd (USA)
 Enrico Piperno
 Evonne Goolagong (Australia)
 Gabriela Sabatini (Argentina)
 Gaurav Natekar – 1996 Arjuna Award
 Greg Rusedski (UK) – 1999 C A Trophy
 Gustavo Kuerten (Brazil)
 Hana Mandlikova (Czechoslovakia)
 Helena Sukova (Czechoslovakia)
 Helen Wills Moody (Late) – 8 times winner of Wimbledon besides 31 major titles
 Henri Leconte (France)
 Ilie Nastase (Romania)
 Ivan Lendl (USA)
 Jaideep Mukherjee
 Jana Novotna (Czech) – 1999 Hanover WTA Tournament
 Jannifer Capriati (US) – 1992 Olympics Gold Medal (women's)
 Jimmy Connors (USA)
 John McEnroe (USA) – Inducted Into International Hall of Fame, 1999
 John Mattke (USA)
 Kevin Curren (USA)
 Kimiko Ito (Japan) – 1994 Asiad Gold (women's singles)
 Leander Paes – French Open (1999 (Men's Doubles), Wimbledon 1999 (Men's Doubles), 1990 Arjuna Award, 1994 & 1996 Rajiv Gandhi Khel Ratna Award, Asiad Gold along with Gaurav

Natekar (men's doubles) and 1996 Olympic Bronze Medal

Lindsay Davenport – 1999 Wimbledon, 1999 Fed Cup and 1996 Olympics Gold Medal (women's)

Mahesh Bhupathi – Wimbledon 1999 (Men's Doubles); French Open 1999 (Men's Doubles), US Open 1999 (Mixed Doubles), French Open 1997 (Mixed Doubles) and 1995 Arjuna Award

Mallikar Washington (USA)
 Manuel Orantes (Spain)
 Manuela Maleeva (Bulgaria)
 Marcello Rio (Chile) – 1999 Singapore Open
 Marc Rosset (Switzerland) – 1992 Olympics Gold Medal (men's)

Mark Ferreira (Maharashtra)
 Martina Hingis (Switzerland) – 1999 Australian Open

Martina Navratilova (USA)
 Mary Pierce (France)
 Mats Wilander (Sweden)
 Michael Stich (Germany)
 Monica Seles (Yugoslavia)
 Mrs. Billie Jean King (USA)
 Nandan Bal
 Nandini Krishnan
 Pan Bing (China) – 1994 Asiad Gold (men's singles)

Pat Cash (Australia)
 Peggy Zaman (Tamil Nadu)
 Pete Sampras (USA) – 1999 Wimbledon
 Peter Fleming (USA)
 Prahlad Srinath (India) – 1999 ITF Satellite Circuit Title

Premjit Lal
 Ramanathan Krishnan
 Ramesh Krishnan – 1980-81 Arjuna Award
 Richard Krajicek (Netherlands)
 Sandeep Kirtane (India)
 Serena Williams (USA) – 1999 US Open; 1999 Grand Slam Cup

Sergei Bruguera (Spain)
 Shashi Menon
 Srinivasan Vasudevan (Tamil Nadu)
 Stefan Edberg (Sweden)
 Steffi Graf (Germany) – 1999 French Open
 Syed Fazluddin (India)
 Thomas Enqvist (Sweden) – 1999 Eurocard Open

Tim Mayotte (USA)
 Tom Chalko (USA) – 1999 Satellite Masters Title
 Tracy Austin (USA)

Uday Kumar

Venus Williams (USA) – 1999 Swiss Challenge

Trophy

Vijay Amritraj – 1983 Padma Shri

Vinod Sridar (India)

Virginia Wade (Britain)

Vishal Uppal (India)

Wa Majoli (Croatia)

Wendy Turnbull

Yami Sekhri (Delhi)

Yuvgeny Kafelnikov (Russia) – 1999 Australian

Open 1999, 1999 Kremlin Cup ATP Tour Title

Zeeshan Ali

VOLLEYBALL

Abhijeet Chatterjee (India)

Abdul Rahim (Pakistan)

Amir Singh (India)

Anu Jacob (India)

Dalel Singh – 1990 Arjuna Award

Hemlata Ursal (India)

Ihsan (Pakistan)

Ishfaq Nawaz (Pakistan)

Joy Joseph (India)

M.S. Rajesh (India)

Mithu Roy (India)

P. Radhika (India)

Salomi Xaviour (India)

Shiji Kurian (India)

Tom Joseph (India)

Vaishali Phadtare (India)

WEIGHTLIFTING

A.H. Jack (South Korea)

A.K. Pandian (India) – 3 Gold Medals at 1998

Commonwealth Games

Alexandre Kourlovitch (CIS) – 1992 Olympics

Gold Medal (super heavy weight)

Andrey Chemerkin (Russia) – 1996 (super heavy weight)

Bharti Singh – 1993 Arjuna Award

Geoffrey Laws (U.K.)

Haili Mitlu (Turkey) – 1996 Olympics Gold

Medal (bantam weight 54 kg)

J.C. Cheema (Punjab)

Ji Young (South Korea)

Karnam Malleswari – 1994 Arjuna Award

Kim Tae-Hyun (S. Korea) – 1994 Asiad Gold (Over 108 kg men's)

Krishan Kumar (Delhi)

Lan Shizhand (China)

Li Ui Bong (North Korea)

Ma Weiguang (China)

Meng Xizhuan (China) – Broke World record in

World Weightlifting (54 kg class) Championship (1997)

N. Kunjarani Devi – Medal Winner of the Century; 1990 Arjuna Award & 1996 Rajiv Gandhi

Khel Ratan Award

Newton Burrowes (U.K.)

Nick Voukelatos (Australia)

Pablo Lara (Cuba) – 1996 Olympics Gold Medal

(middle weight)

Pakizeh Djam Ali (Iran)

Pal Singh Sandhu – 1996 Dronacharya Award

Ram Chandra – 1990 Arjuna Award

Ramesh Kumar (Services)

Ronny Weller (Germany) – 1992 Olympics Gold

Medal (heavy weight)

Sandeep Kumar (India)

Salish Rai (India)

Steve Pinset (U.K.)

Talal El Najjar (Syria)

Tim Taimazov (Ukraine) – 1996 Olympics Gold

Medal (Heavy weight – 108 kg)

Wilson Dhanraj (India)

Yang Xia (China) – Broke World record in

Weightlifting (53 kg) at XIII Asiad in Bangkok

Yao Jing Jingyuan (China)

Zhang Xugang (China) – 1996 Olympics Gold

Medal (light weight)

WRESTLING

Aleksander Karelin (Russia) – 1996 (Freestyle)

Olympics Gold Medal (heavy weight)

Andrzej Wronski (Poland) – 1996 (Freestyle)

Olympics Gold Medal [mid heavy weight (100 kg)]

Anuj Kumar (India)

Ashok Kumar – 1993 Arjuna Award

Bashir Alias Bhola Muhammad (Pakistan)

Bob Robinson (Canada)

Brian Aspen (UK)

Bruce Baumgartner (US) – 1992 Olympics

Gold Medal (Heavy weight – freestyle)

Buvaysa Saytev (Russia) – 1996 (Greco

Roman) Olympics Gold Medal [welterweight

(74 kg)]

Buyanelger Bold (Mongolia)

Chris Rinke (Canada)

Clark Davis (Canada)

Ebrahim Mehraban (Iran) – 1994 Asiad Gold

(130 kg)

Gian Singh

Hamza Yerlikaya (Turkey) – 1996 (Freestyle)

Olympics Gold Medal [middle weight (82 kg)]

Hector Millan (Cuba) – 1992 Olympics Gold Medal (Heavy weight – Greco-Roman)
 Hiroshi Kaneko (Japan)
 Jagdish Kumar
 Jagminder Singh – 1980-81 Arjuna Award, 1982 Commonwealth Gold Medal
 Kaka Pawar – 1998 Arjuna Award
 Kartar Singh
 Kumava Dinesh (Sri Lanka)
 Kripa Shankar Patel (India)
 Mahabir Singh – 1985 Arjuna Award; X Asiad Gold Medal; 1982 Commonwealth Gold Medal

Mahmut Demir (Turkey) – 1996 (Greco-Roman) Olympics Gold Medal [heavy weight (130 kg.)]
 Manoj Kumar (India)
 Md. Hussain Mohebi (Iran)
 Mehtab Singh
 Mukesh Kumar (India)
 Ombr Singh – 1990 Arjuna Award
 Papoo Pehlwan (India)
 Pawan Kumar (India)
 Rajender Singh – 1978-79 Arjuna Award, XI and XII Commonwealth Games Gold Medal
 Ramphal
 Ranjit Saran Yadav (Nepal)
 Rasul Khadem Azghadi (Iran) – 1996 (Greco-Roman) Olympics Gold Medal [light heavy weight (90 kg.)]

Rohtas Singh Dahiya – 1998 Arjuna Award
 Saman Siriardena (Sri Lanka)
 Sardar Singh – XI Commonwealth Games Gold Medal
 Satpal Singh (India)
 Shamsheer Singh (India)
 Sujit Mann (India)
 Saral (Iran)
 ender Kumar (India)
 Takashi Tobayashi (Japan)
 Tom Bronds (US) – 1996 (Greco-Roman) Olympics Gold Medal [featherweight (62 kg.)]

Toshi Askakura (Japan)
 Valentin Jordanov (Bulgaria) – 1996 (Greco-Roman) Olympics Gold Medal [flyweight (52 kg.)]
 Wlodzimierz Zawadzki (Poland) – 1996 (Freestyle) Olympics Gold Medal [feather weight (62 kg.)]
 Zahid Khan (Pakistan)
 Zeveng Duvchin (Mongolia)

Arms Wrestling
 Preeti Arora

YACHTING

C.S. Pradipak – 1987 Arjuna Award
 Fali Unwalla
 Farokh Tarapore
 Franck David (France) – 1992 Olympics Gold Medal (men's)
 Homi Motiwala – 1993 Arjuna Award
 Jeejee Unwalla
 Jose Maria Van Der Ploeg (Spain) – 1992 Olympics Gold Medal (men's)
 Kelly Subbanand Rao – 1996 Arjuna Award
 Khalid Akhtar (Pakistan)
 Lee Lai-Shan (Hon Kong) – 1996 Olympics Gold Medal (women's mistral class)
 Li Ke (China) – 1994 Asiad Gold (women's)
 Linda Anderson (Norway) – 1992 Olympics Gold Medal (women's)
 Lt. Dhruv Bhandari
 Matensz Kusznierewicz (Poland) – 1996 Olympics Gold Medal (men's finn class)
 Nikolaos Kaklamanakis (Greece) – 1996 Olympics Gold Medal (men's mistral class)
 Pushpendra Kumar Garg – 1990 Arjuna Award
 Ryan Han Wui Tan (Singapore) – 1994 Asiad Gold (men's)
 T. Ishiwata (Japan)
 Zarir Karanjia – 1981 Arjuna Award

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13. Tennis Champions

A. AUSTRALIAN OPEN

Year	Winner and Runner-up (Men's)	Winner and Runner-up (Women's)
1999	Yevgeny Kafelnikov (Russia) defeated Thomas Enqvist (Sweden)	Martina Hingis (Switzerland) defeated Amelie Mauresmo (France)
1999	Yevgeny Kafelnikov (Russia) defeated Thomas Enqvist (Sweden)	Martina Hingis (Switzerland) defeated Amelie Mauresmo (France)
1998	Petr Korda (Czechoslovakia) defeated Marcelo Rios (Chile)	Martina Hingis (Switzerland) defeated Conchita Martinez (Spain)
1997	Pete Sampras (USA) defeated Carlos Moya (Spain)	Martina Hingis (Switzerland) defeated Mary Pierce (France)
1996	Boris Becker (Germany) defeated Michael Chang (USA)	Monica Seles (USA) defeated Anke Huber (Germany)
1995	Andre Agassi (USA) defeated Pete Sampras (USA)	Mary Pierce (France) defeated Arantxa Sanchez Vicario (Spain)
1994	Pete Sampras (USA) defeated Todd Martin (USA)	Steffi Graf (Germany) defeated Arantxa Sanchez Vicario (Spain)
1993	Jim Courier (USA) defeated Stefan Edberg (Sweden)	Monica Seles (USA) defeated Steffi Graf (Germany)
1992	Jim Courier defeated Stefan Edberg	Monica Seles defeated Mary Joe Fernandez
1991	Boris Becker defeated Ivan Lendl	Monica Seles defeated Jana Novotna
1990	Ivan Lendl (Winner)	Steffi Graf defeated Mary Joe Fernandez
	Stefan Edberg withdrew from the finals	Steffi Graf defeated Helena Sukova (Czechoslovakia)
1989	Ivan Lendl defeated Miloslav Mecir (Czechoslovakia)	Steffi Graf defeated Chris Evert Lloyd
1988	Mats Wilander defeated Pat Cash	Hana Mandlikova defeated Martina Navratilova
1987	Stefan Edberg defeated Pat Cash	

B. FRENCH OPEN

1999	Andre Agassi (USA) defeated Andrei Medvedev (Ukraine)	Steffi Graf (Germany) defeated Martina Hingis (Switzerland)
1998	Carlos Moya (Spain) defeated Alex Corretja (Spain)	Arantxa Sanchez-Vicario (Spain) defeated Monica Seles (USA)
1997	Gustavo Kuerten (Brazil) defeated Sergei Bruguera (Spain)	Iva Majoli (Croatia) defeated Martina Hingis (Switzerland)
1996	Yavgeny Kafelnikov (Russia) defeated Michael Stich (Germany)	Steffi Graf (Germany) defeated Arantxa Sanchez Vicario (Spain)
1995	Thomas Muster (Austria) defeated Michael Chang (USA)	Steffi Graf (Germany) defeated Arantxa Sanchez Vicario (Spain)
1994	Sergei Bruguera (Spain) defeated Alberto Berasategui (Spain)	Arantxa Sanchez Vicario (Spain) defeated Mary Pierce (France)
1993	Sergei Bruguera (Spain) defeated Jim Courier (USA)	Steffi Graf (Germany) defeated Mary Joe Fernandez (USA)
1992	Jim Courier defeated Petr Korda	Monica Seles defeated Steffi Graf
1991	Jim Courier defeated Andre Agassi	Monica Seles defeated Arantxa Sanchez (Spain)
1990	Andres Gomez (Ecuador) defeated Andre Agassi (US)	Monica Seles defeated Steffi Graf
1989	Michael Chang (US) defeated Stefan Edberg	Arantxa Sanchez defeated Steffi Graf
1988	Mats Wilander defeated Henri Leconte	Steffi Graf defeated Natalia Zvereva (USSR)
1987	Ivan Lendl defeated Mats Wilander (Sweden)	Steffi Graf defeated Martina Navratilova

A. WIMBLEDON

Year	Winner and Runner-up (Men's)	Winner and Runner-up (Women's)
1999	Pete Sampras (USA) defeated Andre Agassi (USA)	Lindsay Davenport (USA) defeated Steffi Graf (Germany)
1998	Pete Sampras (USA) defeated Goran Ivanisevic (Croatia)	Jana Novotna (Czech) defeated Nathalie Tauziat (France)
1997	Pete Sampras (USA) defeated Cedric Pioline (France)	Martina Hingis (Switzerland) defeated Jana Novotna (Czech)
1996	Richard Krajicek (Netherlands) defeated Malival Washington (USA)	Steffi Graf (Germany) defeated Arantxa Sanchez-Vicario (Spain)
1995	Pete Sampras (USA) defeated Boris Becker (Germany)	Steffi Graf (Germany) defeated Arantxa Sanchez-Vicario (Spain)
1994	Pete Sampras defeated Goran Ivanisevic	Conchita Martinez defeated Martina Navratilova (US)
1993	Pete Sampras (USA) defeated Jim Courier (USA)	Steffi Graf (Germany) defeated Jana Novotna (Czech)
1992	Andre Agassi (US) defeated Goran Ivanisevic	Steffi Graf defeated Monica Seles
1991	Michael Stich (Germany) defeated Boris Becker (Germany)	Steffi Graf defeated Gabriela Sabatini
1990	Stefan Edberg (Sweden) defeated Boris Becker	Martina Navratilova defeated Zina Garrison (US)
1989	Boris Becker defeated Stefan Edberg	Steffi Graf defeated Martina Navratilova
1988	Stefan Edberg defeated Boris Becker	Steffi Graf defeated Martina Navratilova
1987	Pat Cash (Australia) defeated Ivan Lendl	Martina Navratilova defeated Steffi Graf

C. US OPEN

1999	Andre Agassi (USA) defeated Todd Martin (USA)	Serena Williams (USA) defeated Martina Hingis (Switzerland)
1998	Patrick Rafter (Australia) defeated Mark Philippoussis (Australia)	Lindsay Davenport (USA) defeated Martina Hingis (Switzerland)
1997	Peter Rafter (Australia) defeated Greg Rusedski (UK)	Martina Hingis (Switzerland) defeated Venus Williams (USA)
1996	Pete Sampras (USA) defeated Michael Chang (USA)	Steffi Graf (Germany) defeated Monica Seles (USA)
1995	Pete Sampras (USA) defeated Andre Agassi (USA)	Steffi Graf (Germany) defeated Monica Seles (USA)
1994	Andre Agassi (USA) defeated Michael Stich (Germany)	Arantxa Sanchez Vicario (Spain) defeated Steffi Graf (Germany)
1993	Pete Sampras (USA) defeated Cedric Pioline (France)	Steffi Graf (Germany) defeated Manuela Maleeva-Fragnole
1992	Stefan Edberg defeated Pete Sampras	Monica Seles defeated Arantxa Sanchez
1991	Stefan Edberg defeated Jim Courier	Monica Seles defeated Martina Navratilova
1990	Pete Sampras (US) defeated Andre Agassi	Gabriela Sabatini (Argentina) defeated Steffi Graf
1989	Boris Becker defeated Ivan Lendl	Steffi Graf defeated Martina Navratilova
1988	Mats Wilander defeated Ivan Lendl	Steffi Graf defeated Gabriela Sabatini
1987	Ivan Lendl defeated Mats Wilander (Sweden)	Martina Navratilova (US) defeated Steffi Graf

Part X

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hill ranges are much lower. The Garo, Khasi, Jaintia and Naga hills running almost east-west join the chain of the Mizo and Arakan hills running north-south.

The Indo-Gangetic Plains, about 2,400 km long and 240 to 320 km broad are formed by the basins of three distinct river systems: the Indus, the Ganges and the Brahmaputra. They are one of world's greatest stretches of flat alluvium and also one of the most densely populated areas on earth. There is hardly any variation in relief. Between the Yamuna river at Delhi and the Bay of Bengal, nearly 1,600 km away, there is a drop of only 200 metres in elevation.

The desert region can be divided in two parts: one the 'great desert' and the other 'little desert'. The 'great desert' extends from the edge of Rann of Kutch, beyond the Luni river northward. The whole of Rajasthan-Sind frontier runs through this. The 'little desert' extends from the Luni river between Jaisalmer and Jodhpur up to the northern waste. Between the great and little deserts lies a zone of more or less absolutely sterile country, consisting of rocky land cut up by limestone ridges. Due to absence of surface water and very scanty rainfall, the region is almost absolutely sterile.

The Peninsular plateau is marked off from the Indo-Gangetic Plains by a mass of mountain and hill ranges varying from 460 to 1,220 metres in height. Prominent among these are the Aravalli, Satpura, Melkalla and Ajanta. The Peninsula is

on one side by the Eastern Ghats, where average elevation is about 610 metres, and the other by the Western Ghats, where it is generally from 915 to 1,220 metres, rising in places to over 2,440 metres. Between the Western Ghats and the Arabian Sea lies a narrow coastal strip, while between the Eastern Ghats and the Bay of Bengal there is broader coastal area. The southern point of the plateau is formed by the Nilgiri Hills where Eastern and Western Ghats meet. The Cardamom Hills lying beyond may be regarded as a continuation of the Western Ghats.

RIVERS OF INDIA

The rivers of India may be classified as follows:

(a) the Himalayan rivers, (b) the Deccan rivers, (c) the coastal rivers and (d) the rivers of the inland drainage basin. The Himalayan rivers are generally snowfed and have, therefore, continuous flow throughout the year. During the monsoon months the Himalayas receive very heavy

precipitation everywhere and the rivers discharge the maximum amount of water during this season, causing frequent floods. The Deccan rivers are generally rainfed and, therefore, fluctuate very much in volume. A large number of streams are non-perennial. The coastal streams, specially of the west coast, are short in length and have limited catchment areas. Most of them also are non-perennial. The streams in the inland drainage basin of western Rajasthan are few and far between. Most of them are of an ephemeral character. They drain towards the individual basins or salt lakes like the Sambhar or are lost in the sands, having no outlet to the sea. Only the river Luni drains into the Rann of Kutch.

The Ganga basin, which is receiving waters from an area of about one-quarter of the total area of India, is the largest. Its boundaries are defined by the Himalayas in the north and the Vindhya mountains in the south. The Ganga has two main headwaters in the Himalayas—the Bhagirathi and the Alaknanda, the former rising from the Gangotri glacier at Gaumukh and the latter from a glacial spout of the Alkapur glacier. A number of Himalayan rivers including the Yamuna, Ghaghra, Gomti, Gandak and Kosi join Ganga. Yamuna, which rises in the Yamnotri glacier and joins the Ganga at Allahabad, is the westernmost river of Ganga system. Of the rivers flowing north from central India into the Yamuna or the Ganga, mention may be made of the Chambal, the Betwa and the Son.

The Godavari basin is the second largest in India. It covers an area of about 10 per cent of the total area of India. The Brahmaputra basin in the east and the Indus basin in the west are about the same size. The Krishna basin is the second largest in the peninsula. The Mahanadi flows through the third largest basin in the peninsula. The basins of the Narmada in the uplands of the Deccan and of the Cauveri in the far south are of about the same size though of different character and shape.

The two other river systems, though small but nevertheless agriculturally very important, are those of the Tapi in the north and the Pennar in the south.

CLIMATIC CONDITIONS

Four seasons are recognised by the Indian meteorological department. They are: (i) the cold weather (December-February); (ii) the hot weather (March-May); (iii) the rainy season (June-

September); and (iv) the season of the retreating south-west monsoon (October-November).

There are four broad climatic regions based on rainfall. Practically the whole of Assam and west coast of India lying at the foot of the Western Ghats and extending from the north of Bombay to Trivandrum are areas of very heavy rainfall. In contrast to these, the Rajasthan desert extending to Kutch, and the high Ladakh plateau of Kashmir extending westward to Gilgit are regions of low

precipitation. In between these areas at the extreme ends of the rainfall range are two areas of moderately high and low rainfall respectively. The former consists of a broad belt in the eastern part of the peninsula merging northward with the Indo-Gangetic plains and southwards with coastal plains. The latter comprises a belt extending from the Punjab plains across the Vindhya mountains into western part of the Deccan widening considerably in the Mysore plateau.

2. National Symbols

NATIONAL FLAG

The National Flag of India is a horizontal tricolour of deep saffron (*Kesar*) at the top, white in the middle and dark green at the bottom in equal proportions. The ratio of the width of the National Flag to its length is two to three. In the centre of the white band is a wheel, in navy blue, which represents the *Charkha*. Its design is that of the wheel (*Chakra*) which appears on the abacus of the Samath Lion capital of Asoka. It has 24 spokes. The design of the flag was adopted by the Constituent Assembly of India on July 22, 1947. Its use and display are regulated by a code.

NATIONAL EMBLEM

The National Emblem is the replica of capital (top portion) of Asoka's pillar at Samath (near Varanasi in U.P.). It shows three lions with open mouths (the fourth which is visible in the Asoka pillar is invisible in the National Emblem—considered hidden from view). There is *Dharma Chakra* (Wheel of Law) in the centre of the base plate, with the figure of a bull on the right side and that of a horse on the left. At the extreme ends on the right and left sides, the view of the other wheels appears. The words *Satyameva Jayate* from the *Mundaka Upanishad* (meaning "Truth alone triumphs") are inscribed below the emblem in the Devanagari script.

NATIONAL CALENDAR

A uniform National Calendar based on the Saka era with Chaitra as its first month and a normal year of 365 days was adopted from March 22, 1957 along with the Gregorian calendar. The dates of the National Calendar have a permanent correspondence with the dates of the Gregorian calendar; Chaitra 1 falling on March 22 normally and on March 21 in a leap year.

NATIONAL ANTHEM

Composed by Rabindra Nath Tagore, the song *Jana-gana-mana* is the National Anthem of India.

The song was first sung at the Calcutta session of the Indian National Congress on December 24, 1911. It was adopted by the Constituent Assembly of India on January 24, 1950 as India's National Anthem. The complete song consists of five stanzas but the first stanza constitutes the first version of the National Anthem. The playing time of the full version of the National Anthem is about 52 seconds. However, a shorter version compressing the first and last lines of the stanza which has a playing time of about 20 seconds is played on some occasions. It reads:

*Jana-gana-mana-adhinayaka, jaya he
Bharat-bhagya-vidhata
Punjab-Sindhu-Gujarata-Maratha
Dravida-Utkala-Banga
Vindhya-Himachal-Yamuna-Ganga
Uchhala-jaladhi-taranga.
Tava shubh name jage,
Tava shubh asisa mange,
Gahe tava jaya gatha,
Jana-gana-mangala-dayaka, jaya he
Bharat bhagya vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he.*

The English rendering of the song, as given by Rabindra Nath Tagore, is as follows:

*Thou art the ruler of the mind of all people
dispenser of India's destiny.*

*Thy name rouses the hearts of Punjab, Sindh,
Gujarat and Maratha.*

*Of Dravida and Orissa and Bengal;
It echoes in the hills of Vindhya and
Himalayas.*

*Mingles in the music of Jamuna and Ganga
and is chanted by the waves of the Indian
Sea.*

*They pray for thy blessings and sing thy praise
The saving of all people waits in thy hand, thou
dispenser of India's destiny.*

Victory, victory, victory to thee.

NATIONAL SONG

Composed by Bankim Chandra Chatterji, the song *Vande Mataram* is the National Song of India. This song has been a source of inspiration to the people in their struggle for freedom. It was first sung at the 1896 session of the Indian National Congress. It reads:

Vande Mataram!

Sujalam, suphalam, malayajashitalam,

Shasyashyamalam, Mataram!

Shubhrajyotsna, pulakitayaminim,

Phullakusumita drumadala shobhinim,

Suhasinim sumadhura bhashinim,

Sukhadam, varadam, Mataram!

The English translation of the song rendered by Sri Aurobindo is as follows:

I bow to thee, Mother,

richly-watered, richly-fruited,

cool with the wind of the south,

dark with the crop of the harvests,

the Mother!

Her nights rejoicing in the glory of the moonlight,

her lands clothed beautifully with the trees in

flowering bloom,

sweet of laughter, sweet of speech,

the Mother, giver of boons, giver of bliss!

NATIONAL ANIMAL

The majestic tiger, which symbolises power and gorgeousness, is the National Animal of India. Tiger has, in fact, been always held in high esteem in this country. A hero of many legends and myths, its rich colour, illusive design, roaring voice and formidable power have always inspired the Indian people. The famous Royal Bengal Tiger is the native of India and the only specie of tigers found outside Africa.

NATIONAL BIRD

The magnificent Peacock is the National Bird of India. The peacock, perhaps the most beautiful among the male birds, is admired for its glistening long blue neck and fanshape crest. The bird has a significant place in Indian legends, literature, folklores and love songs. The courtship dance of the peacock, particularly during the rainy seasons, is indeed spectacular.

NATIONAL FLOWER

Lotus is the National Flower of India. Lotus, which is large and magnificent, is found on the water surface of pools and lakes with its stem and roots down below. To the Indians it symbolises the truth that a person can rise above the worldly evils and keep himself high above them.

Important Days

Africa Industrialization Day	November 20
Air Force Day	October 8
Anti-Emergency Day	June 26
Anti-terrorism Day	May 21
Army Day	January 21
Arunachal Day	February 20
Bangladesh Day	March 26
Breast Feeding Week	August 1-7
Central Excise Day	February 24
Children's Day	November 14
Citizens Day	November 19
Commonwealth Day	May 24
Desh Prem Diwas	January 23
Doctors Day	July 1
Earth Day	April 22
Flag Day	December 7
Goa Liberation Day	June 18
Hiroshima Day	August 6
Human Rights Day (UN)	December 10
Independence Day	August 15
International Customs Day	January 26
International Day of Families	May 15
International Day for the Elimination of Racial Discrimination	March 21
International Day of Innocent Children Victims of Aggression	June 4
International Day for the Elderly	October 1
International Day for Natural Disaster Reduction	October 7
International Day of Solidarity with the Palestinian People	November 29
International Day of Disabled Persons	December 3
International Volunteer Day for Economic and Social Development	December 5
International Literacy Day	September 8
International Women's Day	March 8
International Day Against Drug Abuse and Illicit Trafficking	June 26
Jallianwala Day	April 13
Kisan's Day	December 23
Manav Ekta Divas	April 24
Martyrs' Day	January 30
May Day (Workers' Day; International Labour Day)	May 1
Mount Everest Day	May 29
Nagasaki Day	August 9
National Integration Day	October 31
National Maritime Day	April 5
National Rededication Day	October 31
National Science Day	February 28
National Solidarity Day	May 13
National Sports Day	August 29
National Youth Day	January 12

Navy Day	December 4
No-Tobacco Day	May 31
Police Commemoration Day	October 21
Poor's Day	June 28
Post Office Day	October 9
Quit India Day	August 9
Railway Week	April 10-16
Republic Day	January 26
Sadhbhavana Divas	August 20
Samta Diwas	April 5
Sappers' Day	November 18
Teachers' Day	September 5
UN Charter Signing Day	June 25
UN Day	October 24
Valentine's Day	February 14
V-E Day	May 8
World AIDS day	December 1
World Animal Day	October 2
World Aviation and Cosmonautics Day	April 12
World Book Day	April 23
World Breast Feeding Day	August 1

World Consumers' Rights Day	March 15
World Day for Water	March 22
World Disabled Day	March 15
World Environment Day	June 15
World Food Day	October 16
World Forestry Day	March 21
World Habitat Day	October 5
World Health Day	April 7
World Heritage Day	April 18
World Literacy Day	September 8
World Meteorological Day	March 23
World Ozone Day	September 16
World Press Freedom Day	May 3
World Red Cross Day	May 8
World Standards Day	October 14
World Telecommunication Day	May 17
World Tourism Day	September 27
World Thrift Day	October 30
World Diabetes Day	June 27
World Post Day	October 9
World Population Day	July 11
World Vegetarian Day	October 2

3. Population

In terms of the size of population, India is the second largest country in the world, next only to China. China stands on the top with 1,166 million people. India's population constitutes nearly 16 per cent of the total world population while her geographical area (3.28 million Sq. Km.) is only 2.42 per cent of the world area (135.79 million Sq. Km.) With such a huge population to support on so small an area, the country finds itself in great difficulty in making any significant dent on its poverty and economic backwardness. India's income, which is barely 2 per cent of the total global income, clearly shows the tremendous strain of population on her economy.

1991 CENSUS HIGHLIGHTS

Population of India Total	:	846,302,688
Males	:	439,230,458
Females	:	407,072,230
Decennial population growth 1981-91		
(a) Absolute	...	161,117,996
(b) Percentage	...	23.85
Density of Population	...	273 per sq km
Sex ratio	...	927 females per 1,000 males
Literacy rate		
Total	:	52.19 per cent
Males	:	64.20 per cent
Females	:	39.19 per cent

Note : The above figures of density and literacy rate exclude the States of Assam and J&K.

THE 1991 CENSUS

India's population as at the sunrise of March 1, 1991, according to the figures of 1991 census, was 846.30 million against the world's estimated population of 5,480 million. The population of India is the second largest in the world, next only to China's 1,166 million. The United States with 256 million and Indonesia with 184 million are the third and fourth most populous nations in the world. In other words, nearly half the population of the globe live in these four countries.

An indication of the high density of the Indian population is that by having just 2.42 per cent of the total world area, the country accounts for 15.60 per cent of the total population. The area of India is 3.28 million sq km out of the total world area of 135.79 million sq km.

During the forty-four years since Independence, India's population has more than doubled itself. The population growth during 1981-91 has registered an increase of 23.85 per cent. But significantly, the growth rate over the past decades has shown a decline. It indicates a 0.81 per cent decline in the annual growth rate during the last decade. The growth was 24.80 per cent during 1961-71 and 24.66 per cent in the subsequent decade.

Looking at the census figures in absolute terms, it is frightening to realise that 160.6 million rise in population over the decade means we have

added a Japan to our population in just 10 years or an Australia a year. The census shows that India accounts for nearly 16 per cent of the world population. In other words, every sixth person in the world is an Indian.

BIRTH AND DEATH RATES

The birth rate is projected to decline from 30.9 for 1986-91 to 27.5 for 1991-96 and death rate from 10.8 to 9.4 for the corresponding period.

SEX RATIO

The population, as recorded at the 1991 census, is dominated by males. The exact male population as on the sunrise of March 1, 1991 was 439,230,458 and that of females 407,072,230. The sex ratio in India had generally been adverse to women—the number of women per 1,000 males had generally been less than 1,000. Apart from being adverse to women, the sex ratio had also declined over the decades.

The most disquieting feature of the 1991 census is the unexpected decline in the sex ratio. The sex ratio is 927 females per 1,000 males, showing a fall from 934 per 1,000 males in 1981. From 972 females per 1,000 males in 1901, the figure stood at 946 females per 1,000 males at Independence. The sex ratio, which declined to 930 in 1971, showed a slight improvement in 1981 when it rose to 934. A further fall of five points has occurred between 1981 and 1991.

Males outnumber females by over 32 million. But again Kerala represented a different spectrum. Unlike the rest of the country, the State had a higher number of females than males—it had 1,036 females for every 1,000 males. In Himachal also, the female ratio was higher than the country's average—it stood at 976 females for every 1,000 males.

Compared to the final figures of the 1981 census, the sex ratio had increased in Haryana, Himachal Pradesh, Kerala, Mizoram, Nagaland, Punjab, Sikkim, West Bengal, Andaman and Nicobar, Chandigarh and Delhi. There were some States and Union Territories in which the sex ratio had always been below the all-India sex ratio. These States and Union Territories were Assam, Haryana, Punjab, Rajasthan, Uttar Pradesh, West Bengal, Andaman and Nicobar, Chandigarh and Delhi.

GROWTH RATE

The decennial growth rate of population is 23.85 per cent during 1981-91. The decennial growth rate in the decade 1971-81 was 24.66 per

cent. There has, therefore, been a decrease of 0.81 percentage points in the growth rate during 1981-91 compared to 1971-81.

The census figures indicate that the average annual growth rate in population had fallen to 2.22 per cent over 1981-91 against 2.22 per cent during the previous decade implying a retardation in the growth rate. Though the census does not project any population growth for the future, it is clear that if the growth rate is maintained at the present level, the country's population by the turn of the century would reach the one billion mark. The increase in population over the previous decade, an increase of 161 million, matches the growth of population over 30 years from 1931 to 1961.

Kerala led the States with the lowest population growth rate at 14.32 per cent, while Nagaland showed the highest population growth rate at 35.56 per cent. Goa showed a dramatic decline in the population growth rate from 26.74 in 1981 to 16.08 per cent in 1991, a decline of more than 10 per cent.

Greater Mumbai with a population of 12 million in 1991 showed a remarkable growth, from its 97 lakh population in 1981. Calcutta followed with a population of 10.86 million compared to 9.19 lakh in 1981. The national capital, Delhi, had a population of 8.38 million, compared to 5.19 lakh in 1981. Chennai's population had increased from 4.2 million in 1981 to 5.36 million in 1991. Hyderabad with a population of 4.27 million and Bangalore with 4.11 million figured fifth and sixth among the large cities.

LITERACY

The literacy rate had shown an increase from 43.56 per cent in 1981 to 52.21 per cent in 1991. It was 34.45 per cent in the 1970s. The male to female break-up of 1991 figures showed 64.13 per cent literate males and 39.29 literate females in the country. In the seventies, the male literacy population was 45.95 per cent, compared to 21.1 per cent for female. The literacy rates for 1991 and 1971 relate to population aged 15 years and above. The rates for the years 1981 and 1991 relate to the population aged seven years and above.

At least 52.21 per cent of the country's population is now literate. According to the results of the 1991 census, Kerala still tops the list among the States with 89.81 per cent literacy rate. While Kerala ranked first in the country both in male and female literacy, among the big States, Mizoram came next with a literacy rate of

82.27 per cent. Among the lowest literacy rate, Bihar (38.48 per cent) was preceded by Rajasthan which had a literacy rate of 38.55 per cent.

States where literacy rates were lower than the national average were Andhra Pradesh, Arunachal Pradesh, Bihar, Madhya Pradesh, Meghalaya, Orissa, Rajasthan, Uttar Pradesh and the Union Territory of Dadra and Nagar Haveli.

Female literacy rates were very low in Rajasthan (20.44 per cent), Bihar (22.89 per cent). Among the bigger States, with population of 10 million and above in 1991, the increase in the literacy rate had been the maximum in Haryana.

DENSITY OF POPULATION

There were 273 people per sq km in 1991 as against 216 in 1981 — an increase of 51 persons per sq km during the last decade. In 1901, it was 77 persons per sq km and 117 in 1951. The density is the highest in the Union Territory of Delhi, followed by the Union Territory of Chandigarh, Lakshadweep, Pondicherry and Daman & Diu. Among the States, density is the highest in West Bengal, followed by Kerala, reversing the trend observed in 1981. This is because of the high growth rate of population in West Bengal and the low growth rate of population in Kerala.

State/Union Territory	Population (Lakhs)	Area (Thousand sq km)	Density of population per sq km
Nagaland	12.1	16.6	73
Orissa	316.6	155.7	203
Punjab	202.8	50.4	403
Rajasthan	440.0	342.2	129
Sikkim	4.0	7.1	57
Tamil Nadu	558.5	130.1	429
Tripura	27.5	10.5	263
Uttar Pradesh	1,391.1	294.4	473
West Bengal	680.7	88.8	767
Union Territories			
Andaman and Nicobar Islands	2.8	8.3	34
Chandigarh	6.4	0.1	5,632
Dadra and Nagar Haveli	1.4	0.5	282
Daman and Diu	1.0	0.1	907
Delhi	94.2	1.5	6,352
Lakshadweep	0	0.03	1,616
Pondicherry			1,642

Unity' by the year 2000 AD. In specific terms these goals are to be attained by achieving the following targets by 2000 AD:

- (i) Crude Birth Rate 21 per thousand
- (ii) Crude Death Rate 9 per thousand

- (iii) Infant Mortality Rate Below 60 per thousand live births
- (iv) Effective Couple Protection Rate 60 per cent
- (v) Life Expectancy at Birth 64 years

4. The Human Settlements System

A wide range of human settlements are found in India which vary in size, structure, economy and morphology. There are single dwelling units such as thoroughly scattered homesteads in Kerala, and in parts of Assam and West Bengal as well as very small nucleated settlements in mountainous regions. There are also a variety of villages and towns ranging from small hamlets to high density metropolitan cities. Broadly, the human settlement system in India comprises three major types, viz., urban, rural and tribal.

Urban Settlements: Urban settlements comprise all those places which have either a municipality, corporation, cantonment board or a notified area committee. According to the Census of India, a place becomes urban when (i) it has a minimum population of 5,000; (ii) more than 75 per cent of its working population is engaged in non-agricultural activities and (iii) the density of population exceeds 1,000 persons per square kilometre. However, there are some exceptions to these norms.

According to 1991 Census there were 4,689 towns in the country with a total urban population of about 217.6 million persons.

Uttar Pradesh has the largest number of towns (704), followed by Tamil Nadu (434), Madhya Pradesh (327) and Maharashtra (307). Tripura, Sikkim and Nagaland have 10, 8 and 7 towns respectively. Andaman and Nicobar Islands, and Dadra and Nagar Haveli have only one town each.

Urbanisation Trends: The process of urbanisation has been very slow in India. The number of towns and cities has grown at a low rate from 1,916 in 1901 to 4,689 in 1991, a little less than three-fold increase in 90 years. However, the urban population has increased from about 26 million to around 217 million over this period.

The following table shows the growth in urban population of the country since 1901 and the percentage of rural and urban population to the total population of India.

Relative Growth of Rural and Urban Population

Year	Urban Population (million)	Percentage of total population	
		Rural	Urban
1901	25.8	89.0	11.0
1911	25.9	89.6	10.4
1921	28.0	88.7	11.3
1931	33.5	87.8	12.2
1941	44.1	85.9	14.1
1951	62.4	82.4	17.6
1961	78.9	81.7	18.3
1971	108.9	79.8	20.2
1981	162.2	76.3	23.7
1991	217.6	74.3	25.7

Within the urban population, the greatest increase has been in the case of larger towns having a population of 1 lakh and above. The period between 1951 and 1981 recorded a still sharper increase in large towns (Class 1 towns of 1 lakh and above), their number increased from 74 in 1951 to 296 in 1991. Increasing from less than two crores during these forty years. (those with a population of 10 lakhs and above) recorded a still sharper increase in large towns. According to 1981 census there were 23 cities in India, whereas their number increased to 23 in 1991, and the population of these cities has increased from nearly four crores in 1951 to seven crores between these ten years.

The following table shows the growth in urban population and its growth rate in the 23 major cities.

Rural Settlements: According to the 1991 Census, 629 million people, out of a total population of 846 million persons, lived in rural areas. In 1981, the rural population was 522 million out of the total population of 684 million. The 1991 Census shows that there are 5,57,137 inhabited and 48,085 uninhabited villages in India. Uttar Pradesh, with its 1,12,566 inhabited and 11,635 uninhabited villages has the highest number of villages in the country. Madhya Pradesh has 71,352 villages while Sikkim has only 440 villages.

82.27 per cent. Among the lowest literacy rate, Bihar (38.48 per cent) was preceded by Rajasthan which had a literacy rate of 38.55 per cent.

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Statewise Population, Area and Density of Population (As per 1991 Census)

States/Union Territory	Population (Lakhs)	Area (Thousand sq km)	Density of population per sq km
Andhra Pradesh	665.0	275.1	242
Arunachal Pradesh	8.6	83.7	10
Assam	224.1	78.4	286
Bihar	863.7	173.9	497
Goa	11.7	3.7	316
Gujarat	413.1	196.0	211
Haryana	164.6	44.2	372
Jharkhand	51.7	55.7	93
Karnataka	77.2	222.2	76
Kerala	449.7	191.8	235
Madhya Pradesh	290.9	38.9	749
Maharashtra	661.8	443.5	149
Manipur	789.3	307.7	257
Mizoram	18.4	22.3	82
Nagaland	17.7	22.4	79
Northeast	6.9	21.1	33

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Daman and Diu	1.0	0.1
Delhi	94.2	1.5
Lakshadweep	0.5	0.03
Pondicherry	8.0	0.5
All India	846.3	3,287.3
		273

MOST POPULOUS STATE

Uttar Pradesh continues to be the most populous State, with a population of nearly 139 million. This is more than the population of most of the countries of the world. Only live countries have a larger population than Uttar Pradesh. These are Brazil, China, Indonesia, U.S.A. and Russia. Bihar, with nearly 86 million, comes second and Maharashtra, with nearly 79 million, is third most populous State in the country.

POPULATION POLICY

The population problem in India is a matter of grave concern and has serious implications for our socio-economic progress. Our present numbers not only hamper the growth rate of our economy, but also pose a threat to future social and economic welfare of the masses.

Policy Framework: The National Health Policy approved by the Parliament in 1983 is committed to achieving the goals of 'Health for All' by the year 2000 AD and a 'Net Reproduction Rate of

city' by the year 2000 AD. In specific terms these goals are to be attained by achieving the following targets by 2000 AD:

- (i) Crude Birth Rate 21 per thousand
- (ii) Crude Death Rate 9 per thousand

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The following table shows the population and its growth rate in the 23 major cities of India.

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Metropolitan Cities in India and their population

Sl. No.	Name	State or Union Territory	Total Population 1991		
			Persons	Males	Females
1.	Greater Mumbai	Maharashtra	12,596,243	6,891,222	5,705,021
2.	Calcutta	West Bengal	11,021,918	6,022,489	4,999,429
3.	Delhi	Delhi	8,419,084	4,601,590	3,817,494
4.	Chennai	Tamilnadu	5,421,985	2,805,566	2,616,419
5.	Hyderabad	Andhra Pradesh	4,344,437	2,251,452	2,092,985
6.	Bangalore	Karnataka	4,130,288	2,170,985	1,959,303
7.	Ahmadabad	Gujarat	3,312,216	1,753,320	1,558,896
8.	Pune	Maharashtra	2,493,987	1,310,514	1,183,473
9.	Kanpur	Uttar Pradesh	2,029,889	1,114,225	915,664
10.	Lucknow	Uttar Pradesh	1,669,204	892,308	776,896
11.	Nagpur	Maharashtra	1,664,006	868,767	795,239
12.	Surat	Gujarat	1,518,950	826,087	692,863
13.	Jaipur	Rajasthan	1,518,235	812,589	705,646
14.	Kochi	Kerala	1,140,605	571,169	569,436
15.	Vadodara	Gujarat	1,126,824	593,764	533,060
16.	Indore	Madhya Pradesh	1,109,056	583,653	525,403
17.	Coimbatore	Tamilnadu	1,100,746	570,370	530,376
18.	Patna	Bihar	1,099,647	601,244	498,403
19.	Madurai	Tamilnadu	1,085,914	555,776	530,376
20.	Bhopal	Madhya Pradesh	1,062,771	561,208	501,563
21.	Visakhapatnam	Andhra Pradesh	1,057,118	545,744	511,374
22.	Ludhiana	Punjab	1,042,740	580,961	461,779
23.	Varanasi	Uttar Pradesh	1,030,863	553,991	476,872

Tribal Settlement: Tribal settlements are largely found in the forest areas and the nearby haunts as the tribal groups mainly pursue primitive occupations such as hunting, food gathering and in the forest produce. The tribal population has been estimated at 51.6 million in

Khonds	: Orissa
Kol	: Madhya Pradesh
Kodam	: Andhra Pradesh
Kotas	: Nilgiri (Tamil Nadu)
Kuki	: Manipur
Lepchas	: Sikkim
Lushais	: Tripura
Mina	: Rajasthan
Murias	: Bastar region in Madhya Pradesh
Mikirs	: Assam
Monpa	: Arunachal Pradesh
Mundas	: Bihar

MAJOR TRIBES IN INDIA

Bors	: Assam, Arunachal Pradesh
Apatamis	: Arunachal Pradesh
Badagas	: Nilgiri (Tamil Nadu)
Baiga	: Madhya Pradesh, Rajasthan, Gujarat
Bhotias	: Garhwal and Kumaon regions of Uttar Pradesh
Birhor	: Hazaribagh, Bihar
Chenchus	: Andhra Pradesh, Orissa
Chhutia	: Assam
Gaddis	: Himachal Pradesh
Gallong	: North East Himalayan Region
Garos	: Meghalaya
Gonds	: Madhya Pradesh, Bihar, Orissa, Andhra Pradesh
Jarawas	: Little Andamans
Khas	: Jaunsar-Babar area in U.P.
Khasis	: Assam, Meghalaya

Nagas (Angami, Semi, Ao, Tangkul, Lahora)	: Nagaland; Assam
Oorons (also called Kurukh)	: Bihar, Orissa
Onges	: Andaman & Nicobar Islands
Santhals	: Birbhum region in Bengal, Hazaribagh, Ranchi and Palamau in Bihar
Sentinelese	: Andaman and Nicobar
Shompens	: Andaman and Nicobar
Todas	: Nilgiri (Tamil Nadu)
Uralis	: Kerala
Waris	: Maharashtra

5. Principal Languages

The fact that as many as 1,652 languages and dialects are spoken in India is a proof of the country's amazing diversity. Broadly, these languages belong to the Indo-Aryan and Dravidian families of languages, though some Indo-European languages are also spoken and understood by some of the people in India.

The Indo-Aryan languages, including Hindi, Bihari, Rajasthani, Gujarati, Marathi, Bengali, Oriya, Assamese, Sanskrit, Kashmiri, Sindhi and Punjabi cover about three-fourths of India's population. Among these, Hindi alone, is spoken by about 38 per cent of the Indians and understood by most of the inhabitants of northern India, as almost all the languages of the north contain elements of basic Hindustani.

The languages of the southern India, viz., Telugu, Tamil, Kannada and Malayalam belong to the Dravidian family and bear little resemblance to Hindi except for some expressions of Sanskrit, the sacred language of the Hindu scriptures.

Of the Indo-European languages, English is the most widely used one and is common medium of instruction and learning in the institutions imparting higher education. Besides English, which emerged as the language of the elite under British rule and continues to hold its sway in large metropolitan cities, French and Portuguese languages are also used by some people in erstwhile colonial territories of Pondicherry and Goa.

States and Union Territories and the Languages largely used in these areas

States

Andhra Pradesh	:	Telugu, Urdu
Arunachal Pradesh	:	Nissi, Dafia, Assamese, Hindi, English
Assam	:	Assamese, Bengali
Bihar	:	Hindi
Goa	:	Marathi, Konkani, Portuguese, English
Gujarat	:	Gujarati
Haryana	:	Hindi
Himachal Pradesh	:	Hindi, Pahari
Jammu and Kashmir	:	Urdu, Kashmiri, Ladakhi, Dogri, Punjabi
Karnataka	:	Kannada
Kerala	:	Malayalam
Madhya Pradesh	:	Hindi
Maharashtra	:	Marathi
Manipur	:	Manipuri, English
Meghalaya	:	English, Tribal languages, Khasi, Garo
Mizoram	:	English, Mizo, Tribal languages
Nagaland	:	Assamese, English, Tribal languages
Orissa	:	Oriya
Punjab	:	Punjabi
Rajasthan	:	Hindi, Rajasthani
Sikkim	:	Bhutia, Hindi, Nepali, Tribal languages
Tamil Nadu	:	Tamil
Tripura	:	Tripuri, Assamese, Bengali, Manipuri
Uttar Pradesh	:	Hindi
West Bengal	:	Bengali

Union Territories

Andaman and Nicobar Islands	:	Hindi, Bengali, Tamil, Malayalam, Tribal languages
Chandigarh	:	Hindi, Punjabi
Dadra and Nagar Haveli	:	Gujarati, Hindi, Bhili, Bhilodi
Daman and Diu	:	Marathi, Gujarati
Delhi	:	Hindi, Urdu, Punjabi
Lakshadweep	:	Malayalam, Tribal languages
Pondicherry	:	Tamil, Telugu, Malayalam, English, French

The Constitution of India recognises 18 major languages, which are specified in the Eighth Schedule to the Constitution. These are: Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu and Urdu. Hindi is the official language of India and English is an associate language.

The Inter-State frontiers of the Union of India were delineated on the linguistic basis with a view to bringing people who speak the same language and the related dialects under one administration.

OFFICIAL LANGUAGE

Hindi in Devanagari script is the official language of the Union and the international form of Indian numerals is used for official purposes. It was provided in the Constitution of India that English shall continue to be used for all official purposes of the Union till January 25, 1965 but a complete change over to Hindi was not practicable within the stipulated period. Therefore, English, in addition to Hindi, continues to be used for all official purposes.

6. Major Indian Religions

India, being a secular country, does not have any State religion. The state of India allows for freedom of faith, worship and religion. The amazing diversity of India is reflected in the number of religions and faiths practised by the Indian people, some of which were born on this land while others were brought in by the successive political and cultural invasions and assimilated by the people of this country. Among the major religions in India, Hinduism is the largest, followed by Islam, Christianity, Sikhism, Buddhism, Jainism and Zoroastrianism.

Hinduism: Hinduism is among the most ancient religions of India. The Hindus, i.e., the followers of Hinduism, account for over 80 per cent of India's total population. Hinduism teaches the existence of one Supreme Universal Spirit, but its adherents to worship Him (Ishwar, Aramatma or Parama Brahma) in any form they like. This makes Hinduism a henotheistic religion where the Brahmins, Kshatriyas, Vaishyas and Shudras have been assigned strictly compartmentalised functions. However, with the passage of time, the caste distinctions have become loose, and with the growing social awakening, the lower caste people, who had been looked down upon by those belonging to the higher castes, are now getting their rightful place in the Hindu society.

Hinduism has a rich and varied philosophy. The main scriptures of the Hindus are the Vedas, the Upanishads, the Gita, the Ramayana and the Mahabharata.

Islam: The Muslims, as the followers of Islam are known, form the second largest religious community in India accounting for over 11 per cent of her total population. Though spread over all parts of India, the ratio of Muslim population exceeds the national average in Lakshadweep Islands, Jammu and Kashmir, Assam and West

Bengal. Islam came to India along with the Muslim invasions. It is a strictly monotheistic religion which professes the totalistic acceptance of God's (Allah's) will. It allows no "graven images" to profane His worship. Equality of all believers and a caste-free society are two other features of Islam.

Prophet Mohammed is believed to be the last and greatest of the prophets, and the Holy Koran, as revealed to him, is the sacred book of Islam. The devout Muslim has five duties: Belief in the one true God, i.e., Allah, prayers five times a day, the giving of alms, a month's fast every year, and a pilgrimage to Mecca at least once in a lifetime.

Sikhism: The Sikhs are a sturdy martial race known for their valour and broadmindedness. They constitute a little less than 2 per cent of India's population. Though dispersed widely over the entire country, their largest concentration is in Punjab, where they form the majority of the State's population.

Sikhism which emerged in the 15th century tried to bridge the gap between Hinduism and Islam. The founder of Sikhism, Guru Nanak Dev, preached against humbug and hypocrisy in religion. However, it was Guru Gobind Singh who forged the Sikhs into a martial community.

Jainism: The Jains form about half a per cent of India's population and are largely spread in the States of Rajasthan, Gujarat and Maharashtra. They believe that Mahavira was the last of the Tirthankaras who was preceded by 23 such other perfect souls.

Buddhism: Though Buddhism originated in India, the followers of this religion, viz., the Buddhists form less than three quarters of one per cent of India's population. Maharashtra has the largest concentration of the Buddhists as 85 per cent of all the Buddhists in India live there. Arunachal

adesh and the higher Himalayan habitats of north-western India too have some Buddhist population.

Principal Religions

Places of Worship and Religious Books

Religions	Worship Places	Religious Books
Christian	Church	Bible
Hindu	Temple	Vedas, Bhagwat Gita, Mahabharata, Ramayana
Muslim	Mosque	Quran
Parsee	Fire Temple	Zend Avesta
Sikh	Gurdwara	Guru Granth Sahib
Jew	Synagogue	Torah

Christianity: Christians comprise about two and-a-half per cent of India's population. They are largely concentrated in Goa, Maharashtra, Arunachal Pradesh, Tamil Nadu and Kerala, the last three States accounting for over 60 per cent of the total Christian population in the country.

Zoroastrianism: The Parsees, as the followers of Zoroastrianism are known, fled their native Persia in the face of Muslim religious persecution and arrived in India in the 7th century. Since then, most of them have remained in the region of Mumbai.

7. Social Structure

India's social structure is a unique blend of diverse religions, cultures and racial groups. Historically, India has been a hospitable land to numerous immigrants and invaders from distant parts of Asia and Europe. The cultural patterns of these alien settlers have, over the past many centuries, been interwoven with the native culture to produce India's glorious cultural heritage.

The uniqueness of Indian social structure lies in its unity amidst diversity. The population of India is racially diverse combining elements of six main racial types, viz., the Negrito, the Proto-Australoid, the Mongoloid, the Mediterranean, the Western Brachycephals and the Nordic. All the great religions of the world, viz., the Hindus, the Muslims, the Christians, etc., are found here. There are 18 major literary languages, apart from numerous other languages and dialects. There is striking diversity between various communities and groups in kinship and marriage rites, customs, inheritance and modes of living. Diversity is also seen in the pattern of rural as well as urban settlements, community life, cultural and social behaviour as also in the institutional framework.

The caste system, a system of hierarchical social organisation that was evolved and practised by our ancestors almost from the beginning of the early civilisation, forms the basic foundation of India's social structure. The institution of caste determines a person's place in life right from the day he is born, he inherits his occupation from his father and, in turn, passes it on to his descendants. No matter, how intelligent and gifted he may be, he can never rise above the caste into which he is born. Each caste stands for a

way of life that is, to some extent, distinctive from the others. The Indian society today is divided into numerous castes and sub-castes, each having its distinctive place in social hierarchy, but at the same time, castes of a region form part of a single social framework. What is significant about the caste system is that castes are found not only among the Hindus who are more rigid in preserving and practising this system, but this system also exists to some extent among the Indian Muslims, Christians, Sikhs, Jains and Jews.

In spite of these numerous social, cultural, religious and racial diversities, India still remains a largely unified society. India is a political entity, every part of which is governed under the same Constitution. Unification of India into a single political entity was achieved under the British rule, though one should not ignore the earlier efforts made by the great rulers like Asoka, Samudra Gupta and the Mughals, particularly Akbar, who brought large parts of the country under one power.

Apart from the fact that India is now a single political entity, one must remember that the concept of unity has been the running thread among various Indian religions and cultures. The concept of unity is inherent in Hinduism, the religion of almost 80 per cent of India's population. The places of Hindu pilgrimages are found in all the nook and corners of the country where salient features of the Sanskrit culture are widely preserved and practised. The Buddhists, Jains and Sikhs have all originated from India and, therefore, for them it is their sacred land. The Muslims and the Christians too have their sacred

places in India. India is a secular state which treats all religions as equal, and this is an unequivocal acceptance of the fact that India is

a unified nation of diverse people practising different faiths, customs traditions and modes of worship.

8. Ancient India

Foundation of Indian Civilisation: Not much is known of the pre-historic man in India. Available evidence, however, suggests that at a fairly early period the use of iron, copper and other metals was widely prevalent in this subcontinent which is indicative of the progress that this part of the world had made from the paleolithic age to the comparatively developed form of culture. By the end of the fourth millennium BC, India had emerged as a region of highly developed civilisation.

The Indus Valley Civilisation: The Indus Valley civilisation flourished for quite a long span of history. While the Western historians are of the firm opinion that this civilisation occupied the period between 3000 BC and 1500 BC, some of the Indian experts of ancient history believe that the beginning of this civilisation dates back to 3250 BC. The area, extent and duration of this civilisation are still matters of controversy. Originally, it was thought that this civilisation was confined only to the Indus Valley, but the recent discoveries have established beyond doubt that it extended well into Rajasthan and to the south of it into Gujarat.

Nothing was known of the Indus Valley civilisation till 1922-23 when the Archaeological Department of India carried out excavations in the Indus Valley wherein the ruins of two old cities, viz., Mohenjo-Daro and Harappa were unearthed. Mohenjo-Daro, which in the local Sindhi language means 'The Mound of the Dead', is a place in Larkana district of Sindh province in Pakistan while Harappa is in Montgomery district of Punjab, also in Pakistan. The ruins of buildings and other things like household articles, implements, weapons of war, gold and silver ornaments, seals, toys, pottery idols, etc., show that some four to five thousand years ago a highly developed civilisation flourished in this region. The Indus Valley civilisation was basically an urban civilisation and the people lived in well planned and well built towns which were also the centres of trade. The ruins of Mohenjo-Daro and Harappa show that these were magnificent merchant cities well planned, scientifically laid and well looked after. They had wide roads and well developed drainage system. Residential houses were built on both

sides of the roads. The houses were made of baked bricks and had two or more storeys.

The highly civilised Harappans knew the art of growing cereals, and wheat and barley constituted their staple food. They also consumed vegetables and fruits and ate mutton, pork and eggs as well. Evidence also shows that they wore cotton as well as woollen garments. Both men and women wore beautiful ornaments made of gold, silver, ivory, copper and precious stones. They enjoyed singing, dancing and painting.

The Indus Valley people are believed to be the worshippers of Mother Goddess and Lord Shiva. Worship of trees, animals and stones also seems to have been quite common among them.

By 1500 BC Harappan culture came to an end. Among the various causes ascribed to the decay of Indus Valley civilisation are the invasion of the Aryans, the recurrent floods and other natural causes like earthquakes, etc. However, there is no unanimity among the historians on this question.

Vedic Civilisation: The next important landmark in the history of ancient India is the advent of Vedic civilisation associated with the coming of Aryans. From where and when did the Aryans come to India is still among the dilemmas of history. However, the great Vedas left by them to the posterity throw some light on their political, social and religious institutions and beliefs. The largely accepted view is that the Aryans were nomadic pastoral people who originally inhabited the Caspian Sea region of the Central Asia. Some time in the middle of the third millennium BC, they started on a great migration towards Europe and Asia. A section of this migratory population reached the frontiers of the Indian subcontinent around 2000 BC and entered the country in search of pastures. Initially, they met with strong opposition from the well organised urban communities inhabiting India at that time. However, the newcomers were able to break this resistance and settle down in Punjab. It is here in Punjab the hymns of Rigveda were composed. From Punjab they moved eastwards and spread all over the Gangetic Valley.

The Aryans lived in tribes and spoke Sanskrit which belongs to the Indo-European group of



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Buddhist works give more details of the Sakyas as Buddha himself came from this stock. At the helm of affairs of the Sakya republic was the President who bore the title of Raja and thus Buddha's father Suddhodana was a Raja. The business of the republic was conducted in an open assembly where the rich and the poor and the young as well as the old were present alike. The procedure adopted in these assemblies was highly democratic.

Besides the republics, there were monarchical states, among which the important ones were Kausambi (Vatsa), Magadha, Kosala and Avanti. These states were ruled by vigorous personalities who had embarked upon the policies of aggrandisement and absorption of neighbouring states. It also becomes evident from the Buddhist works that while both the republics and the monarchical states existed in India during the life of Lord Buddha, there were distinct signs of decay in the republican states while those under the monarchs were flourishing and expanding.

Alexander's invasion: In 326 BC Alexander invaded India. He crossed the river Indus and advanced towards Taxila. Ambhi, the King of Taxila, welcomed him and his men. Then he challenged King Porus, ruler of the kingdom between rivers Jhelum and Chenab, and asked for his submission. Porus, however, did not oblige. Alexander defeated Porus in the bloody battle of Kurri on the bank of Jhelum. This battle is too well known to every Indian, more particularly the dialogue between the two gallant warriors after the defeat of Porus. Tradition goes that Porus with numerous wounds on his body was led a captive before Alexander. The Greek conqueror asked his Indian foe what treatment should be meted out to him and there came the proud reply from Porus "As a King treats a King". After the victory over Porus, Alexander advanced forward and defeated Kathalois of Sangla and several other tribes surrendered to him. He then wanted to conquer the Gangetic Valley which was under the rule of the Nanda dynasty. The Nandas had a powerful army. Alexander's soldiers, who were tired and homesick after many years of wanderings, did not have the courage to face the mighty Nandas and thus refused to march forward. Consequently, Alexander had to order retreat and on his way back died at Babylon in 323 BC.

The Maurya Empire (322 BC-185 BC): The infusion following the death of Alexander gave Chandragupta Maurya, an ambitious and valiant young prince, a God-sent opportunity to liberate the country from the yoke of Greeks and thus

occupy the provinces of Punjab and Sindh. He later overthrew the power of Nandas at Magadha with the aid of Kautilya and found a glorious Maurya empire in 322 BC. Chandragupta, thus, earned a title of the Liberator and the first Emperor of the Bharata. Chandragupta's empire extended from Bengal to Hindu Kush and from the Himalayas to Narmada. It covered the whole of north India and part of Afghanistan. It is believed that some parts of south India up to Karnataka also formed his empire. With its capital at Pataliputra, India, under Chandragupta, was, for the first time, unified into one strong central power. Much is not known for certainty about the early life of this great king but the accounts of Megasthenes given in the extracts of his famous book *Indica*, Kautilya's *Arthashastra* and Vishakhadatta's *Mudra Rakshas* give a vivid description about the system of Mauryan administration founded by Chandragupta. The king was the head of the polity and was aided by an elaborate bureaucracy with numerous departments and a hierarchy of officials. He looked earnestly to the welfare of his subjects. Kautilya lays down, "The happiness of his subjects is the happiness of the King, the good of the subjects his good. What pleases him is not good for the King but what pleases his subjects is."

After a reign of 24 years Chandragupta either died or abdicated and his son Bindusara ascended to the throne of the mighty empire built by his father in 298 BC. History of his reign is still shrouded in mystery, but it is believed that he undertook no aggressive wars against his neighbours, maintained his friendly contacts with Hellenic world and retained intact the extensive empire built and bequeathed to him by his father.

Bindusara was succeeded by his son Ashoka in 273 BC who emerged not only as the most famous king of the Maurya dynasty, but is also regarded as the greatest king of India and the world. His empire covered the whole territory from Hindu Kush to Bengal and extended over Afghanistan, Baluchistan and the whole of India with the exception of a small area in the farthest south. The valleys of Nepal and Kashmir were also included in his empire. It was the biggest Indian empire and Ashoka was the first Indian king to rule over almost the whole of India.

The most important event of Ashoka's reign was his war with Kalinga (modern Orissa) which proved to be a turning point in his life. The Kalingas were a brave self-respecting people and did not surrender themselves to the Mauryan emperor and, therefore, when Ashoka invaded Kalinga in 261 BC the latter offered stiff resistance.

Ashoka conquered Kalinga after a bloody war in which, as recorded in Rock Edict XIII, "one hundred and fifty thousand people were captured, one hundred thousand were slain and much many times that number died of disease, privation and pestilence." The sight of this massive bloodshed and slaughter so deeply affected Ashoka that he vowed not to wage a war any more. He accepted Buddhism and used his vast resources for the spread of this religion both at home and abroad. It was through his efforts that Buddhism became a worldwide religion. Ashoka died in the year 232 BC after having ruled the country for 40 years, a period which is called the golden interlude without any parallel in world history.

The period following Ashoka's demise was one of dismemberment of the mighty Mauryan empire through internal revolts and external invasions. In 185 BC, Pushyamitra, the Brahman Commander-in-Chief of the last Maurya King Brihadratha, killed his master and himself ascended the throne. He founded the Sunga dynasty which ruled for a period of more than hundred years (185-73 BC). The Sungas, in their turn, were overthrown by Vasudeva, who founded the Kanva dynasty. The Satvahanas ruled in the south with glory for quite a long time. In the extreme south, there flourished the kingdoms of Cholas, Pandyas and Cheras. In the east the kingdom of Kalinga, which had been conquered by Ashoka after a fierce battle resulting in immense bloodshed and misery, had regained its independence. A number of foreign immigrant tribes also invaded, the prominent ones being the Greeks, the Parthians, the Sakas and the Kushans.

In the beginning of the 1st century AD the Kushans established their authority over the north-west frontier of India. The most famous among the Kushan kings was Kanishka (125 AD-162 AD), who was third in Kushan dynasty. His empire extended from Central Asia up to Vindhya and from Vasi to Afghanistan. Kanishka was the first Indian ruler who had territory outside India with its capital at Purushapura, i.e., modern Peshawar. Kanishka belonged to the Buddhist faith and championed this religion. He built up several public buildings and monasteries. In the Buddhist history, his memory is cherished with admiration only next to Ashoka. The Kushan rule continued till the middle of 3rd century AD. The most notable achievement of their rule was the development of Gandhara School of Art and further spread of Buddhism into distant regions of Asia.

Gupta Dynasty (320 AD-540 AD): The next important landmark in the history of India is the

rise of Guptas. The great Hindu dynasty that ruled India up to the middle of the 6th century AD, Gupta dynasty was founded by Chandragupta (320 AD-335 AD). At the time of his coronation in 320 AD, he styled himself as 'Maharajadhiraja'. He married a princess named Kumardevi of the ruling family of Vaisali. This probably helped him a good deal to extend his authority to vast dominions over large tracts of modern Uttar Pradesh and Bihar.

Chandragupta's successor, Samudragupta ruled India between 335 AD and 375 AD. He was a great military genius. In a whirlwind campaign over the whole of northern India and the Deccan, he subdued a large number of kings. His empire extended from Hooghly in the east to Yamuna and Chambal in the west, and from Himalayas in the north to Narmada in the south of India. Mighty kings of Deccan also acknowledged his overlordship. Samudragupta was not only a mighty conqueror but an able administrator and great patron of art and music.

The next important king, Chandragupta II (380 AD-413 AD), also known as Vikramaditya, was a distinguished son of a distinguished father. He conquered the extensive territories of Malwa, Gujarat and Kathiawar and transferred his capital to Ujjain. It was most probably during his reign that Kalidas, the greatest Sanskrit poet and dramatist, as well as many other scientists and scholars flourished. The famous Iron Pillar, standing near Qutab Minar in Delhi, was erected during his reign. In fact his was the golden age of art and literature. Fahien, a Chinese traveller who visited India during his reign, speaks highly about the prosperity and good administration of the country.

Vikramaditya's son, Kumaragupta and grandson, Skanda Gupta maintained the noble traditions established by their ancestors and upheld the cause of Dharma. The Gupta period is known as the golden period of Indian history. The country was well administered and attained the pinnacle of glory in the domains of art, literature and science. The well-known universities of Nalanda, Taxila, Sarnath and Ujjain attracted students from foreign countries, particularly from China. Hinduism was at its zenith, although both Buddhism and Jainism flourished side by side under liberal policy of toleration adopted by Gupta kings.

The decline of Gupta power in northern India between the close of 5th and the 6th century AD gave rise to various small independent kingdoms and attracted foreign invasions of Huns. The Huns, under their leader, Toramana, penetrated into the interior of the Gupta kingdom and

established their power over vast tracts of Punjab, Kashmir, Malwa, Rajputana and a part of Uttar Pradesh. His son, Mihiragula established his capital at Sakala (near Sialkot in Punjab). Mihiragula was a cruel barbarian and one of the worst tyrants known in the history. There was a revolt against his atrocities and he suffered a devastating defeat at the hands of Yasodharmaman of Malwa resulting in the collapse of Hun power in India.

India in the Seventh Century AD
Harshavardhana: At the commencement of the 7th century, Harshavardhana (606 AD-647 AD) ascended the throne of Thanesar and Kannauj after the murder of his brother, Rajya Vardhana. At the time of his accession, Harsha was barely 15 years of age. He embarked upon a career of conquest and aggrandisement. After incessant warfare of six years, Harsha was successful in establishing order over a large part of northern India, Malwa, Bengal and Assam. His advance towards Deccan was checked by a decisive defeat at the hands of Pulakesin I, Chalukya king of the south and, thus, his empire could not extend beyond Narmada. Harshavardhana was a mighty king, combining in himself the qualities of both Samudragupta and Ashoka. The Chinese traveller Hiuen Tsang, who visited the country during his reign, has given a vivid description of social, economic and religious conditions, under the rule of Harsha and spoke highly of the king. Harsha, indeed, was the last Hindu emperor of northern India. He respected all religions and worshipped Buddha, Shiva and the Sun God. Harsha's death once again, left India without any central paramount power.

The Chalukyas of Badami: The Chalukyas were a great power in the southern India between the 6th and 8th century AD and again from the 10th to the 12th century AD. Pulakesin I, the first great ruler of this dynasty, ascended the throne in 540 AD and having made many splendid victories, established a mighty empire. His son Kirtivarman who succeeded him in 567 AD also made extensive conquests. But Pulakesin II (602-642 AD), son and successor of Kirtivarman, regarded as the greatest ruler of the Chalukya dynasty. Apart from his many conquests over the Kadambas of Vanavasi, the Gangas of Mysore, the Mauryas of Konkan, his most outstanding achievement was to defeat king Harshavardhan and thus preventing the extension of his empire beyond Narmada. However, Pulakesin II was defeated and killed in the battle with the Pallava king Narsimhavarman I who had attacked the Chalukya territory.

Vikramaditya I, son of Pulakesin II, renewed his struggle against the Pallavas and inflicted crushing defeats on three Pallava kings in succession, Narsimhavarmar, Mahendravarman II and Parmeshwaravarmar. He also defeated the kings of Pandya, Keralas and Cholas and thus restored the old glory of the Chalukya dynasty. He died in 681 AD. His son Vinayaditya continued his struggle against Pallavas and the other contemporary powers and became a mighty ruler who established diplomatic relations with Persia and Ceylon. Vijayaditya, son and successor of Vinayaditya, was a peace loving king who did not embark upon many aggressions except for his expedition against Pallavas towards the close of his reign. Vijayaditya's son, Vikramaditya II who ruled from 733 AD to 747 AD continued the struggle against Pallavas and captured their capital Kanchi. He, however, did not go in for any plunder, rather he gave handsome donations to temples and religious places. He defeated the contemporary powers of Cholas, Pandyas and Cheras and threw back the Arabs who had invaded the northern parts of the Chalukya empire. His son and successor, Kirtivarman II, was, however, a weak

king who was overthrown by his own feudatory chief Dantidurga, who founded a new dynasty called the Rashtrakutas.

The Pallavas of Kanchi : Not much is known about the early history of the Pallavas till the reign of Simhavishnu who ruled in the last quarter of the 6th century AD whose domain is said to exist between the rivers Krishna and Cauveri. His son and successor Mahendravarman was a versatile genius who unfortunately lost northern parts of his dominion to the Chalukya king, Pulakesin II. But his son, Narsimhavarmar I, crushed the power of Chalukyas. The Pallava power reached its glorious heights during the reign of Narasimhavarmar II (695-722 AD), who is well known for his architectural achievements. He built many temples, and art and literature flourished in his times. Dandin, the great Sanskrit scholar, lived in his court. However, after his death, the Pallava empire began to decline and in course of time they were reduced to a mere local tribal power. Ultimately, the Cholas defeated the Pallava king Aparajita and took over their kingdom towards the close of the 9th century AD.

9. Medieval India

Between the 8th and 10th century AD, a number of powerful empires emerged in India. While the Palas dominated over the eastern and northern parts of India, the Pratiharas empire extended over the western and parts of northern India. In the south, the Rashtrakuta empire which dominated the Deccan, had also under its control some territories of north India. Of these three, the Rashtrakuta empire lasted the longest.

The Palas: The Pala empire was founded by Gopala somewhere around 750 AD. The greatest king of Pala dynasty was Dharmapala, son of Gopala, who reigned from about 770 AD to 810 AD. Since the days of Harsha, Kannauj was considered as the symbol of sovereignty of north India and Dharmapala, after his initial defeats at the hands of Pratihara ruler Vasantraja and Rashtrakuta king Dhruva, succeeded in gaining control over Kannauj, which was again lost to the Pratiharas. Devapala, the son of Dharmapala, ascended the throne in 810 AD and extended his control over Assam and parts of Orissa. After Devapala's death, the Pala empire disintegrated till it once again revived in the 10th century and continued until the early 13th century.

The Palas, who ruled over a large empire in eastern India and parts of the north, were great patrons of Buddhist religion. Dharmapala revived the world famous Nalanda University and also founded the Vikramashila University at Magadha. They built many viharas for Buddhist monks and had close cultural relations with Tibet.

The Pratiharas: Though the Pratiharas, also known as Gurjara-Pratiharas, had risen to prominence somewhat earlier than Palas, the real foundations of the Pratihara empire was laid by Bhoja who gradually rebuilt the empire and regained control over Kannauj by 836 AD. King Bhoja's attempts to conquer Gujarat and Malwa led to his conflict with the Rashtrakutas. Parts of Malwa, Gujarat and some territories on the eastern side of the river Sutlej are believed to have formed the Bhoja empire. After Devapala's death, Bhoja also extended his empire to the east. He died in 885 AD and was succeeded by his son Mahendrapala who ruled till 908-09 AD and extended the empire over Magadha and north Bengal. The Pratiharas were great patrons of art, learning and literature. They built many fine buildings and temples. The Pratihara empire gradually declined after Mahipala,

a grandson of Bhoja, was defeated by the Rashtrakuta King Krishna III in 915 AD. After the decline of Pratiharas, many kingdoms sprang up which were ruled by the Rajput kings, the Chauhans, the Paramaras and the Chandellas.

The Rashtrakutas: The Rashtrakuta dynasty, which ruled over Deccan at the time when Palas and the Pratiharas were ruling over the northern and western India, was founded by Dantidurga who overthrew the Chalukyas in the middle of the 8th century AD. It was a remarkable dynasty which produced a number of able administrators and brave warriors. Three of its rulers Dhruva, Krishna III and Indira III, carried their victorious armies into the heart of north India and inflicted crushing defeats on the most powerful rulers of that region. They also fought constantly with the Chalukyas of Vengi in the east, the Pallavas of Kanchi and the Pandyas of Madurai in the south. Among the greatest Rashtrakuta kings was Krishna III (939-965 AD), who crushed the power of all his opponents in the south and is believed to have led a glorious expedition to the northern India wherein he gained the occupation of Ujjain. The Rashtrakuta empire began disintegrating following the death of this mighty king.

The Rashtrakuta kings were great patrons of art and literature. They were also tolerant in their religious views and patronised Saivism, Vaishnavism as well as Jainism. They also allowed the Muslim traders to settle down in their empire and permitted them to preach Islam.

The Chola Empire of the South: The Chola empire, which emerged in the middle of the 9th century, covered a large part of Indian peninsula as well as parts of Sri Lanka and the Maldivian Islands. It was founded by a Pallava feudatory, Vijayalaya, who captured Tanjore in 850 AD. The greatest among the Chola rulers were Rajaraja (1014-1044 AD) and his son Rajendra I (1012-1044 AD). Under Rajaraja the Chola kingdom grew into an extensive and well-knit empire. Rajaraja, in his career of aggression and conquest, defeated the Pandyas of Madurai, the Chera ruler of Kerala, and also invaded Sri Lanka and annexed its northern part to his empire. On his naval exploits, he conquered the Maldivian Islands. He also conquered the eastern Chalukya kingdom of Vengi and the Kalinga.

Rajaraja was succeeded by his son, Rajendra I, who carried forward the annexationist policy of his father. He led armed expeditions to distant lands of Bengal, Orissa and Madhya Pradesh. The conquest of Sri Lanka was also completed. The most remarkable exploit of Rajendra I

was his conquest of Kadaram and a number of other places in Malay peninsula.

The successors of Rajendra I, Rajadhiraj (1018-1052 AD) and Rajendra II (1052-1063 AD), were brave rulers who fought fiercely against the later Chalukya kings, but could not check the decline of Chola empire. The later Chola kings were weak and incompetent rulers. The Chola empire came to an end with the invasion of Malik Katar in 1319 AD.

Rise of Islam: Islam, the Muslim religion, was founded by Prophet Muhammad at the beginning of 7th century AD. Prophet Muhammad was born in Mecca in Arabia in 570 AD, at a time when the Arab was a land of superstitions and ignorance, full of undesirable customs and practices. A child of religious bent of mind, he often retired to a cave near Mecca for meditation. At the age of forty, he had the 'visions of truth' which completely convinced him that Allah was the only God and that he himself was the Prophet of God. He preached the message to the people, forbade the worship of idols and enjoined upon people to have full faith in God and His Prophet. He won some followers but many people, chiefly the rich merchants, turned against him. Ultimately, he left Mecca in 622 AD and came over to Medina. This event is known as Hijrat (departure) and the Muslim calendar Hijri begins from this year. He died in 632 AD and was buried at Medina, and by this time the entire Arabia had accepted Islam.

Islam teaches faith in one all-powerful Allah, before whom the man is powerless. It speaks confidently of life after death and of the day of final judgement when all shall receive the reward for their early actions. According to the five fundamental tenets of Islam, a Muslim (i) must proclaim the unity of God and the Prophethood of Muhammad; (ii) he must offer prayers five times every day and on a Friday afternoon in a mosque; (iii) he must give alms to the poor as a religious act; (iv) he must keep fast from dawn to dusk throughout the period of Ramzan; and (v) he must endeavour to go to a pilgrimage to Mecca at least once in his life time. Besides these five principles, Islam forbids idol worship, enjoins upon Muslims not to eat pork and not to lend money on interest. It emphasises the life of virtue and benevolence. No rituals govern a Muslim's worship. Quran, the holy book of Muslims, reports the words of God as received by His Prophet Muhammad through the angel Gabriel. A simple, free and benevolent religion, Islam soon spread in Arabia and attracted many adherents all over the world.

Muslim Invasion of India: The rise of Islam and the Muslim invasions on India inexorably changed the course of Indian history. Muhammad-bin-Qasim invaded India in 711 AD and captured Sind and Multan, but his career came to a sudden end as he was recalled and put to death. It was later after about three hundred years that Sultan Mahmud of Ghazni, the ferocious leader, carried out as many as seventeen raids on India during the years 1000-1026 AD. He was a staunch Muslim whose aim was not to conquer India but to propagate Islam and plunder India's fabulous wealth. Every time he came, he plundered the temples and ruined the cities. Beyond this, he left no imprint on India's history.

Muhammad Ghori invaded India in 1175 AD. After the conquest of Multan and Punjab, he advanced towards Delhi. The brave Rajput chiefs of northern India headed by Prithvi Raj Chauhan defeated him in the First Battle of Tarain in 1191 AD. After about a year, Muhammad Ghori came again to revenge his defeat. A furious battle was fought at Tarain in 1192 AD in which the Rajputs were defeated and Prithvi Raj Chauhan was captured and put to death. This Second Battle of Tarain was, thus, a decisive battle which laid the foundations of Muslim rule in northern India. However, before he could consolidate his conquests, Muhammad Ghori was stabbed to death in 1206 AD.

The Delhi Sultanate: The period between 1206 AD and 1526 AD in India's history is known as the Delhi Sultanate. During this period of over three hundred years, five dynasties (32 kings) ruled in Delhi. These were the Slave dynasty (1206-1290), the Khilji dynasty (1290-1320); the Tughlaq dynasty (1320-1414); the Sayyid dynasty (1414-1450), and the Lodhi dynasty (1451-1526).

The Slave Dynasty: The Slave dynasty was founded by Qutub-ud-din Aibak, a slave of Muhammad Ghori, who became the ruler after the death of his master. He was the first Muslim king of India who made marriage relations with the powerful Muslim chiefs and consolidated his conquests. He was a great builder who built the majestic 238 feet high stone tower known as Qutab Minar in Delhi. He died in 1210 due to injuries.

The next important king of the Slave dynasty was Shams-ud-din Altamash (1211-1236) who himself was a slave of Qutub-ud-din Aibak. He is regarded as one of the greatest rulers of the Delhi Sultanate who consolidated conquests made by his master and gave it the shape of a well-knit empire. Altamash died in 1236.

Razia Begum (1236-1240), the capable daughter of Altamash, was the first and the only Muslim lady who ever adorned the throne of Delhi. A highly talented woman, she possessed all the virtues necessary in a monarch. However, her special weakness for Yakut, an Abyssinian slave, and her public appearances without a veil could not be tolerated by orthodox Muslim nobles who banded against her in revolt. Razia fought valiantly, but was defeated. She was murdered while asleep in a jungle.

Nasir-ud-din Mahmud, son of Altamash, succeeded Razia in 1246. A gentle, pious and noble person, he is called the Darvesh king. He had entrusted all the work of his government to his minister Balban, who was wise and capable and faithfully served his master for twenty years. He not only suppressed the internal revolts of the Rajputs but also repulsed the invasion of the mighty Mongols. Nasir-ud-din Mahmud died in 1266 AD.

Ghiyas-ud-din Balban (1266-1286), originally a slave of king Altamash and then a minister of Nasir-ud-din Mahmud, ascended the throne in 1266 AD. Having shown his competence as a minister for about 20 years, Balban proved to be one of the ablest of the Delhi Sultans. He not only saved the country from the Mongol invasion, but also established peace and order in the country. A strict disciplinarian, he held his court with great punctuality and etiquette. Amir Khusrau, the great Urdu and Persian poet, adorned his court. Balban died in 1286, and was succeeded by his grandson, Kaikobad, an incompetent, indolent person who was defeated by Jalal-ud-din Khilji, and thus came to an end the powerful Slave dynasty.

The Khilji Dynasty (1290 AD-1320 AD): Jalal-ud-din Khilji (1290-1296) founded the Khilji dynasty when he ascended the throne in 1290 AD after defeating the weak and incompetent successor of the powerful slave king Balban. An old man of seventy, Jalal-ud-din was mild, generous and a person of religious disposition. However, he was able to put down several revolts as well as a Mongol invasion in 1292. He was got murdered in 1296 by his ambitious nephew and son-in-law, Ala-ud-din.

Ala-ud-din Khilji (1296-1316) was the first Muslim ruler whose empire covered almost the whole of India up to its extreme south. An intrepid general and an ambitious administrator, Ala-ud-din ranks high among the rulers of Hindustan. During his reign of 20 years, he fought many battles, conquered Gujarat, Ranthambhor, Chittor, Malwa, Deccan and thus extended the Delhi empire up to

deep south. He also repulsed several attacks by the Mongols. He introduced several measures to curb internal revolts and external invasions and adopted methods to regulate market prices of essential commodities. However, this great king was poisoned by his own Prime Minister, Malik Kafur and he died in January 1316 AD, and with it the Khilji dynasty came to an end.

The Tughlaq Dynasty (1320 AD-1412 AD) : Ghiyas-ud-din Tughlaq (1320-1325), who was the Governor of Punjab during the reign of Ala-ud-din Khilji, ascended the throne in 1320 AD and founded the Tughlaq dynasty. An able and merciful king, he introduced many socio-economic reforms and built the city of Tughlakabad near Delhi. He went out and conquered Warrangal and put down a revolt in Bengal. On his way back he was killed when the wooden pandal erected to welcome him collapsed suddenly.

Muhammad-bin Tughlaq (1325-1351) was a great intellectual, just, merciful, generous and a strictly religious person, but a man devoid of any practical wisdom. Therefore, all his schemes for improvement of administration and extension of his dominions came to nothing. He inherited a massive empire but lost many of its provinces, more particularly Deccan and Bengal. He died in 1351 AD while pursuing a rebel chief in Sind.

Feroz Shah Tughlaq (1351-1388), a cousin of the late Muhammad-bin Tughlaq, ascended the throne of the Delhi Sultanate in 1351. A godfearing, pious and merciful king, Feroz Tughlaq, devoted much of his energy to the betterment of his people. He built canals, schools, hospitals and founded many cities. After the death of Feroz in 1388, the Tughlaq dynasty came virtually to an end. Although the Tughlaqs continued to reign till 1412, the invasion of Delhi by Timur in 1398 may be said to mark the end of the Tughlaq empire.

Timur's Invasion—1398 AD : It was during the reign of the last king of the Tughlaq dynasty, Sultan Mahmud Tughlaq, that the mighty king of Turkestan, Amir Timur or Timurlang (Timarlane—Timur the Lame) as he is popularly known, invaded India in 1398 AD. He crossed Indus and captured Multan and just walked over to Delhi without much resistance. At Delhi he defeated Mahmud Tughlaq and entered the city where for 5 days his men killed and plundered in a general massacre. After about 15 days' stay he returned to Samarkand with a large booty, leaving behind a shattered Delhi Sultanate caught in famine, disease and anarchy.

The Sayyad Dynasty (1414 AD - 1450 AD): Timur, on his way back, appointed Khizar Khan

Iis Viceroy, who became the king of Delhi in 1414 AD. Khizar Khan was a Sayyad and, therefore, his dynasty ruled over Delhi for about 37 years. The last king of this dynasty, king Alam Shah, handed over the rule to Bahlol Lodhi, the Afghan Governor of Punjab, in 1451 and himself retired.

The Lodhi Dynasty (1451 AD-1526 AD): Bahlol Lodhi (1451-1489) was the first king and founder of the Lodhi dynasty. With a view to restoring the Delhi Sultanate its past glory, he conquered many territories including the powerful kingdom of Jaunpur.

Sikandar Lodhi (1488-1517), son and successor of Bahlol Lodhi, was powerful king who conquered Bihar and Tirhut. He founded the Agra city and transferred his capital from Delhi to Agra. The place called Sikandra, near Agra, where the tomb of the mighty Mughal Akbar stands, is named after Sikandar Lodhi. He was an efficient administrator and a patron of arts and letters.

Ibrahim Lodhi (1517-1526), who succeeded his father Sikandar Lodhi, was a cruel and arrogant king. His Afghan nobles could not pocket the insults heaped upon them by the king and, thus, there were many revolts. At last, Daulat Khan Lodhi, the Governor of Punjab, invited the king of Kabul, Babur, to crush Lodhi and conquer India. In the Battle of Panipat, Babur defeated Ibrahim Lodhi and became the ruler of Delhi and Agra. With this the Delhi Sultanate ended and began the era of the great Mughal empire in India.

The Vijayanagara and the Bahmani Kingdoms : The Vijayanagara and the Bahmani kingdoms emerged during the later years of the reign of Muhammad Tughlaq and dominated southern India for more than two hundred years. The Vijayanagara and Bahmani kings built beautiful capitals, magnificent buildings, promoted art and culture, maintained law and order and encouraged trade and commerce. In brief, while the northern part of India was overrun by the forces of disintegration, the southern India was witnessing an era of peace and prosperity.

The Vijayanagara Empire (1336-1565): The Hindu kingdom of Vijayanagara was founded by the two brothers Harihara and Bukka in 1336 AD under the inspiration of their Guru Madhav Vidyaranya. They soon established their sway over the entire territory between the rivers Krishna in the north and Cauvery in the south. The rising power of the Vijayanagara empire brought it into clash with many powers and they frequently fought wars with the Bahmani kingdom.

The most famous king of the Vijayanagara empire was Krishnadeva Raya (1509-1529). A

learned man, a great conqueror and an enlightened ruler, he suppressed the revolts with ability, seized Raichur from the Sultan of Bijapur and humbled the king of Orissa. As a great builder, he built magnificent temples, constructed irrigation projects, beautified the capital and other cities and promoted the welfare of his people. The kingdom of Vijayanagara reached the heights of its glory under Krishnadeva Raya. However, his death in 1529 was the beginning of the decay of this magnificent empire, which was virtually wiped out in 1565. Achyuta Raya, son and successor of Krishnadeva Raya, struggled throughout his reign against heavy odds as the foes of the Vijayanagara empire had renewed their onslaughts. After his death in 1542, two quick successions took place and the throne passed on to Rama Raya, an ambitious person who attempted to rebuild the glory of the Vijayanagara empire through diplomacy, which did not yield much result. He invaded Ahmednagar and during his triumphant march his army committed horrible atrocities, including the insult of Muslim women, destruction of mosques and disrespect for the holy Quran. This inflamed the religious sentiments of the Muslim rulers, who sank their differences and combined to wage a holy war against Vijayanagara empire. In the fierce Battle of Talikota, the combined armies of Bahmani sultans inflicted a crushing defeat on the Vijayanagara armies; Rama Raya was captured and beheaded, about a hundred thousand Hindus were slain and the wealthy empire was plundered. The Battle of Talikota, thus, sealed the fortunes of the mighty Vijayanagara empire, though in its weakened form it continued to survive for another hundred years.

Bahmani Kingdom (1347-1526): The Muslim kingdom of Bahmani was established by some nobles of the Deccan who revolted against the repressive policies of Sultan Muhammed Tughlaq. In 1347, Hason became the king of Bahmani under the title Abdul Muzaffar Ala-ud-din Bahmani Shah and founded the Bahmani dynasty. This dynasty lasted for about 175 years and had 18 rulers. At the height of its glory, the Bahmani kingdom extended from north of Krishna river up to Narmada, and stretched east-west from the coasts of the Bay of Bengal to the Arabian Sea. The rulers of Bahmani were often at war with the neighbouring Hindu kingdom of Vijayanagara.

The most distinguished figure of the Bahmani kingdom was Mahmud Gawan, who was a Minister in the State for over two decades. He fought many wars, subdued many kings and annexed many territories to the Bahmani kingdom. Within

the kingdom, he improved the administration, organised finances, encouraged public education, reformed revenue system, disciplined army and removed corruption. A man of character and integrity, he was held in high esteem by the common masses. But the jealousies of the other nobles and their machinations led to his execution and with this started the decline of the Bahmani empire, which came to an end with the death of its last king Kalimullah in 1527.

In contrast to the Vijayanagara rulers, the Bahmani kings make a dismal reading. Most of them were drunkards, bigots and tyrannical, and did not do much for the welfare of their subjects. However, a few of them devoted their attention to the development of agriculture and irrigation. But largely the people in the Bahmani kingdom were poor while the nobles were extremely opulent and indulgent in luxury.

The Bhakti Movement: An important landmark in the cultural history of the medieval India was the silent revolution in society brought about by a galaxy of socio-religious reformers, a revolution known as the Bhakti Movement. About the time Islam made its appearance in India, a religious upheaval was in the offing. The leader of this Hindu revivalist movement was Shankaracharya, a great thinker and a distinguished philosopher. But his preachings of the doctrine of pure monism (Advaitwad) being beyond the intelligence of the common people, it was left to Ramanuja to revive Hinduism (Vaishnavism) by preaching 'Bhakti' as a means of salvation.

Ramanuja lived in the 12th century AD. Ramanuja built up the philosophy of Vishishtadvaita (qualified monism) and preached the doctrine of personal devotion to God. He travelled extensively throughout India to preach his ideas and his teachings won a large number of adherents. His followers are called Vaishnavas.

Among the later exponents of the Bhakti movement, the notables were Ramananda, Chaitanya, Kabir and Nanak. These saints were free from the bondage of any particular creed or sect and put their faith in one God. Their main tenet was Bhakti (Devotion) as the only means of salvation. 'Bhakti' meant to them, single-minded, uninterrupted extreme devotion to God that could be gradually converted into love akin to the love of a man for his dear or near ones. God to them was the source of all joy and bliss and could be worshipped by a devotee as his supreme beloved. God dwelt in the heart of an individual and one, therefore, does not need to go to any place of worship to realise Him. His realisation could be attained only through Bhakti.

Ramananda raised his voice against the increasing formalism of the orthodox cult and founded a new school of Vaishnavism based on the gospel of love and devotion. His most outstanding contribution is the abolition of distinctions of caste among his followers. He also employed the common man's language, Hindi, to preach his teachings.

Chaitanya Mahaprabhu, who is regarded as the greatest among the Vaishnava saints, emphasised universal love and brotherhood as the first step to the love of God. He was against ritualism and casteism and accepted disciples from all religions and classes of people. His deity was Lord Krishna accompanied by his beloved, Radha. He enjoined his followers to enjoy recitation of Lord's name with accompaniment of dance and song (*Kirtans*) in the course of which one could reach a state of ecstasy and feel the personal presence of God near him.

Kabir was the greatest among various disciples of Ramanand. He was the first religious teacher of prominence to foster a spirit of unity among the Hindus and the Muslims. He fought against superstitions, ritualism, idol worship and caste system. According to him, there was one God who could be described by various names. "Call him Ram, Rahim, Allah, Khuda, Hari, Govind, but He is one." There could be no separate God for Hindus and Muslims. All the men and women of the world are His living forms.

Nanak, the founder of Sikh religion, was opposed to all distinctions of caste as well as the religious rivalries. He declared, "There is no Hindu, there is no Musalman." His gospel was that of universal toleration based on all that was good in Islam or Hinduism. He preached the Unity of God and condemned formalism and ritualism of both Islam and Hinduism.

Although the Bhakti movement could not help to remove permanently the gulf between Islam and Hinduism, it helped a good deal in creating harmony between the Hindus and Muslims. The movement reduced the bitterness between the two religions and developed understanding and respect for each other. The noble Islamic concepts of oneness of God and universal brotherhood of man were incorporated in Hinduism. The movement also helped regeneration of the Hindu society. It reduced the distinctions of caste and birth and weakened the domination of Brahmins and priests. The high and the low among the Hindus forgot their prejudices and began to believe in the equality of all human beings before the God.

Sulism: The terms Sufi, Wali, Darvesh and Faqir are used for Muslim saints who attempted to achieve development of their intuitive faculties through ascetic exercises, contemplation, renunciation and self-denial. By the 12th century AD, Sulism had become a universal aspect of Islamic social life as its influence extended over almost the entire Muslim community.

Sulism represents the inward or esoteric side of Islam or the mystical dimension of Muslim religion. However, the Sufi saints, transcending all religious and communal distinctions, worked for promoting the interest of humanity at large. The Sufis were a class of philosophers remarkable for their religious catholicity. Strictly speaking, Sulism is the philosophy of goodwill and the religion of the love of God. Sufis regarded God as the Supreme Beauty. To achieve this Beauty, one must admire it, take delight in His thought and concentrate his attention on Him only. They believed that God is 'Mashuq' and Sufis are the 'Ashiqs'.

Sulism crystallised itself into various '*Silsilahs*' or orders. Abul Fazal makes a mention of 14 '*Silsilahs*' in *Ain-i-Akbari* which were common in the times of Akbar. The four most popular among these were Chishtis, Suhrawardis, Qadiriya and Naqshbandis.

The Chishtis had established their centres in Ajmer, Warangal, Surat, Nagpur, Rajputana and later on extended their sway over Assam, Bengal, Bihar and Deccan. The Chishtis were opposed to the idea of private property, led a pure and simple life, used minimum clothings and did not accept any charity from state. Khwaja Mouin-ud-din Chisti, Baba Farid, Nizam-ud-din Auliya and Nasir-ud-din Chiraghi are among the famous Chisti saints.

Suhrawardis were confined to Sind, Multan and Punjab. They differed from Chishtis in their organisation and policies. They mixed up freely with ruling classes, accepted state emblems and accumulated wealth. Among the famous saints of this order were Bahau-ud-din Zakariya and Hamid-ud-din Nagauri. Multan and Uch were the two principal centres of this order of Sufis.

The Naqshbandis lay great emphasis on observing the law of Shariat and denounced all innovations which spoil the purity of the Islamic doctrine. They challenged the idea of Unity of Being. The Qadiriya order was opposed to music and singing.

Sulism took roots in both rural and urban areas and generated a deep spiritual culture. Its influence on the mass forms of religious formalism

and hypocrisy and endeavoured to create a new world order in which spiritual bliss was the only and the ultimate goal. At a time when struggle for political power was the prevailing madness, the Sufi saints reminded men of their moral obligations. To a world torn by strife and conflict they tried to bring peace and harmony. Sufism, a religion of intense devotion, provided to the Muslims as well as the Hindus, a common mode of worship for realisation of God, the Supreme Beauty. The most important contribution of Sufism is that it helped to blunt the edge of Hindu-Muslim prejudices by forging the feelings of solidarity and brotherhood between these two religious communities.

The Mughal Empire (1526 to 1540 AD and 1555 to 1707 AD): Babar defeated Ibrahim Lodhi at Panipat in 1526 AD and founded the Mughal dynasty in India. His successors expanded the Mughal dominion extensively till the reign of Aurangzeb nearly the entire country was brought under one sway. The period between the coming of Babar and the death of Aurangzeb in 1707 is one of the most distinct and glorious period of Indian history. Under the Mughals, the country attained political unity and administrative cohesion. Trade and industry flourished. People were largely happy and prosperous. Art and letters blossomed. As a result, the fame of India's wealth and splendour spread through the world.

Babar (1526-1530): Zahir-ud-din Muhammad Babar was the first of the great Mughal emperors of India. A descendant of Timur on father's side and Changez Khan on his mother's side, Babar was a brave warrior. After defeating Ibrahim Lodhi in the First Battle of Panipat in 1526 he entered Delhi and soon gained control over Agra. After more battles with Rajputs he extended his power over Punjab, Uttar Pradesh and north Bihar. He died at a young age of 48 years in 1530 at his capital Agra without getting much time to consolidate his victories.

Humayun (1530-1540 and 1555-1556): Babar's eldest son was Humayun who was only 23 years of age when he came to the throne. He had many admirable qualities. He was a brave soldier as well as great general. His manners were polished and charming. As a man, he was generous and affectionate. But Humayun lacked resolution, and his easy-go nature proved his worst enemy. Not surprising, troubles for him started sooner than expected. Bahadur Shah raised the banner of revolt in Gujarat. Humayun was able to defeat him but he did not consolidate his gain and left his enemy to recover back his dominions. His other adversary, Sher Khan, known as Sher Shah Suri,

proved too shrewd for him and was soon able to drive Humayun out of Hindustan and crown himself as the emperor. Humayun wandered for about 15 years. Meanwhile, Sher Shah Suri died and Humayun was able to defeat his successor, Sikandar Suri and regain his crown of the Mughal empire. However, soon after he died in January 1556 like his father at a young age of 48 years.

The Afghan Intertude—Sher Shah Suri (1540-1545): Sher Shah, whose original name was Farid, was son of a petty Jagirdar. He passed his childhood in adversity but this, however, brought out the best in Farid who embarked upon an independent career. He became the governor of Bihar. Seeing the Mughals indulging in luxury under Humayun, he made up his mind to expel them from India. Though difficult, he accomplished his task with courage and shrewdness. After defeating Humayun he became the emperor and re-established the Afghan rule in India. As a king, Sher Shah has so many achievements to his credit. He established an efficient system of public administration. He reorganised the military system and brought about revenue reforms that won him the title of the forerunner of Akbar. He built roads and planted shady trees along with them with 'sarais' (rest houses) at regular intervals. Sher Shah did not survive long after his accession on the throne and died in 1545.

Mughals Re-established—Akbar (1556-1605): Jalal-ud-din Muhammad Akbar was the greatest of the Mughal emperors and one of the ablest kings the world has ever seen. It was under his reign that the Mughal empire reached its climax. He united the whole of north India and built up an empire which extended from Afghanistan to Bengal and from Kashmir to Godavari in the south.

Akbar along with his tutor and guardian Bairam Khan was at Kalanaur in Punjab when he got the news of the death of his father, Humayun. There itself, on February 14, 1556 he was coronated at a simple ceremony by Bairam Khan, who himself became his regent. But the new king had neither a kingdom nor a capital as in the turmoil of Humayun's death, Himu, the Hindu general of Muhammad Adil Shah, captured Delhi and Agra and ascended the throne as Vikramaditya. Akbar, with the help of Bairam Khan, defeated Himu in the Second Battle of Panipat in 1556 and, thus, became the king of Delhi and Agra. He was a brave general and capable administrator. Though uneducated, he was highly cultured and refined. He initiated a policy of toleration and goodwill towards all his subjects. He befriended the Rajputs and married the daughter of Raja Bharmal of

Amber. He abolished the 'Jizya' (a tax that had been imposed on Hindus by the earlier rulers). He introduced a new Divine Faith (*Din-i-Ilahi*) which combined the good points of all the religions. His long reign of five decades forms the bright chapter of the Indian history during which the country made rapid progress in all walks of life, establishment of a regular revenue system, organisation of civil and military administration, encouragement of art and literature and construction of magnificent buildings and monuments. Akbar also brought about social reforms and made efforts for the abolition of Sati and child marriage. During his rule, the public services were open to all on merit, without discrimination on the basis of caste, sect or colour. Akbar died in 1605 and was buried at Sikandara near Agra.

Jehangir (1605-1627): Akbar's son Salim became the king after his father's death under the title of Nur-ud-din Muhammad Jehangir. He married Mehr-un-Nisa whom he gave the title of Nur Jahan (light of the world). He loved her with a blind passion and made over the complete reins of administration to her. Jehangir was generous and good-hearted king who had a passion for justice. He was a keen lover of nature and took interest in arts and paintings. He laid a number of gardens, of which Shalimar and Nishat gardens near Srinagar are widely known and appreciated. His interest in architecture is borne out by the majestic Akbar's tomb and Itmad-ud-daula's tomb in Agra. Jehangir died in 1627.

Shahjahan (1627-1658): At the time of the death of Jehangir, Prince Khurram (later known as Shahjahan when he became the king) was in Deccan. Therefore, Shahryar, the other son of Jehangir, who was in Lahore, proclaimed himself as the emperor. However, he was defeated by Asaf Jah and when Khurram reached Agra, he was seated on the throne in 1627. Shahjahan was a man of great executive ability and had a love for art and architecture. An able administrator, he never fought shy of looking into the details and intricacies of administration. As a result, complete peace, law and order prevailed in the country. Art and literature made phenomenal progress in his reign. But, above all, he was, in a special sense, the architectural director of his days who left for posterity the immortal gifts like Taj Mahal, Jama Masjid and the Red Fort at Delhi and the Agra Fort (which was reconstructed under his inspiration and supervision). It was an irony of his fate that, towards his later years, he was taken prisoner by his own son and successor, Aurangzeb and kept

in Agra Fort where he died in loneliness. As a ruler he governed India for thirty years with firmness and ability and left behind him a legend of magnificence.

Aurangzeb Alamgir (1658-1707): In September 1657, Shahjahan fell seriously ill at Agra and it was feared that he would not recover. This led to a war of succession among his four sons, Dara Shuja, Aurangzeb and Murad. Aurangzeb succeeded to the throne after destroying his brothers. He governed India for over 48 years and left an empire larger than the one he inherited. Though he rose to power in a ruthless manner, he was an orthodox Muslim who was extremely simple and austere in his private life. During the first twenty-five years of his reign, he lived in northern India, attempting to advance the cause of Islam and chastising the infidels. In this, he lost the sympathy of his subjects, especially the cooperation and support of the Rajputs whose friendship and affection had helped Akbar to build a strong and prosperous empire. In the remaining two and a half decades of his life, Aurangzeb frittered away the energies of the Mughal Government in Deccan to crush the power of the Marathas. The latter could not be crushed but the great puritan was totally exhausted, both in the state resources and personal health. Aurangzeb died in February 1707. With his death the forces of disintegration set in and the mighty Mughal empire started collapsing.

RISE OF THE SIKH POWER

Sikhism was founded by Guru Nanak Dev, a leading personage of the Bhakti Movement during the later medieval period. Guru Nanak Dev was born at Talwandi, now called Nankana Sahib, in Pakistan, in 1469. Even as a child, he was given to deep thinking with no interest in worldly pleasures. At the age of thirty, he got enlightenment. Thereafter he travelled almost the whole of the country and went over even to Mecca and Baghdad, preaching his message. Guru Nanak Dev believed in the Unity of God and brotherhood of man. He rejected the caste system, idol worship, blind superstitions and the Brahminic hold over the religion.

Guru Nanak Dev: The first Guru of the Sikhs, he was followed by nine other Gurus in succession whose names and the periods of Guruship are given below :

Guru Angad Dev (1538-1552): The second Guru, he strengthened the system of *langar* (common dining) irrespective of the caste, creed or social position, a system which has continued ever

since contributing to universal brotherhood and unity of man before God.

Guru Amar Das (1552-1574): The third Guru of the Sikhs, he was a great social reformer. He constructed the sacred baoli at Goindwal and organised regular congregations where he preached his religion and impressed upon his followers to disband caste distinctions, *purdah* system and *sati pratha*.

Guru Ram Das (1574-1581): The fourth Guru, he founded the holy city of Amritsar and built the sacred tank, the pool of nectar, which has since become the place of holy pilgrimage for the Sikhs.

Guru Arjan Dev (1581-1606): The fifth Guru, he built the world famous Harmandir Sahib, popularly known as the Golden Temple, in the middle of the sacred tank at Amritsar. He also compiled the holy *Granth Sahib*, which is known as the *Adi Granth* and is the most sacred religious book of the Sikhs. Thus, Guru Arjan Dev gave to the Sikhs their own script (Gurmukhi), their separate pilgrimage place (Amritsar) and their own scripture (the holy *Granth Sahib*). Guru Arjan Dev suffered martyrdom in 1606, which proved a turning point in the Sikh history as it transformed the peace loving Sikh community into a military brotherhood.

Guru Hargobind (1606-1645): The sixth Guru, he found it necessary to train the Sikhs in military art. He built the Akal Takht opposite the Golden Temple, fought several battles with the Mughals and spent the last days of his life at Kiratpur Sahib.

Guru Har Rai (1645-1661): He was the seventh Guru of the Sikhs who passed away at the early age of 30 years in 1661. Just before his death he had his second son, Harkishan ordained as the eighth Guru.

Guru Harkishan (1661-1664): The eighth Guru, he died of small pox while he was yet a small boy. He built the famous 'sarovar' at a place where the Gurdwara Bangla Sahib stands in Delhi.

Guru Tegh Bahadur (1664-1675): He was the ninth Guru. He led a saintly life at Anandpur Sahib. But when Mughal Governor of Kashmir resorted to forcible conversion of Hindus, Guru Tegh Bahadur decided to fight it out. He was summoned to Delhi by Aurangzeb and asked to embrace Islam, to which he refused. He was beheaded on the orders of the emperor. Gurdwara Sisganj in Delhi stands at the place of Guru Sahib's martyrdom and Gurdwara Rakabganj at the site of his cremation.

Guru Gobind Singh (1675-1708): The tenth and the last Guru of the Sikhs, he was the real

founder of the Sikh power. Born on December 26, 1666 at Patna, he succeeded his father, Guru Tegh Bahadur, at the tender age of nine years and decided to end the Mughal tyranny. He lived at a time when Aurangzeb was at the height of power, Shivaji had died, Afghans' spirits had been subdued, Rajputs had been humiliated and Hindus had lost their self-respect. The Guru raised the dormant energies of the people and organised them into valiant fighters. He believed in the brotherhood of man and preached that all mankind was created by one Creator. Among his followers and fighters were Hindus, both high and low, as well as the Muslims.

Guru Gobind Singh spent about twenty years in consolidating his resources, worked for removing differences based on caste, creed, sex and religion, gave his followers training in the art of warfare and then, on the Baisakhi Day in 1699, founded the 'Khalsa' at Anandpur Sahib. He inspired the martial spirit and self-confidence among the Sikhs and made the Khalsa a symbol of valour and character. He fought battles with the Mughals at Anandpur Sahib, Chamkaur Sahib and Muktsar. Though he suffered many brutalities—all his four sons became martyrs and many of his followers were killed—yet he remained unshaken in his resolve. At a young age of 42 years, he passed away in 1708 at Nanded in Maharashtra, where on the banks of Godavari, stands the famous Gurdwara Hazur Sahib. Ever since the death of Guru Gobind Singh, the holy book of the Sikhs, *Guru Granth Sahib*, is regarded as the Guru or the spiritual guide of the Sikhs.

While at Nanded, Guru Gobind Singh appointed Banda Bairagi, also known as Banda Singh (whose original name was Lachman Dev), as the military leader of the Sikhs. Banda Bairagi fought with the Mughals for eight years, killed Subedar Wazir Khan, the murderer of Gobind Singh's sons, and plundered many Mughal territories. However, he was captured in 1716 and put to death during the reign of Farrukhsiyar.

After the execution of Banda Bairagi, the Sikh forces disintegrated and took refuge in the forests and hills. However, soon they organised themselves into bands of warriors, called 'Misls', captured large territories in Punjab and established many small independent states towards the end of the 18th century.

Maharaja Ranjit Singh: Born in 1780, he became the chief of his 'Misl' at the age of 12 years. In 1799 he conquered Lahore, made it his capital, and proclaimed himself a Raja. In 1802 he

conquered Amritsar and within next five years brought the entire area between Sutlej and Jhelum under his control.

In his mission to establish a unified Sikh state, he crossed the river Sutlej in 1806, captured Ludhiana and some more territories and posed a threat to the Sikh states of Nabha, Patiala, Jind, etc. These states appealed to the British for protection, consequent to which Lord Minto sent

Charles Metcalfe who concluded the 'Treaty of Amritsar' with Ranjit Singh in April 1809, under which Sutlej was fixed as the boundary of his state. After this, Ranjit Singh moved to the other side and annexed Kangra, Jammu, Kashmir, Multan, Bannu and Peshawar. He died in June 1839, after having established a strong Sikh kingdom which extended from Sutlej to the base of the Afghan hills.

10. Modern India

Decline of the Mughals: The gallery of the great Mughals ends with the death of Aurangzeb as those who came to the throne after him were only puppet kings and the real power passed into the hands of the nobles. In the war of succession that followed the death of Aurangzeb, Prince Muazzam, came out to be successful and ascended the throne under the name Bahadur Shah in 1707 AD. During his short reign of about five years up to 1712 AD, he made settlements with Marathas and released Shahu, the grandson of Shivaji, whom Aurangzeb kept imprisoned for about 18 years. He made conciliation with the Rajputs and defeated the Sikhs in Punjab.

Jahandar Shah came to the throne in 1712. However, he was overthrown within one year and Farrukhsiyar became the emperor in 1713 with the help of two most powerful nobles, Abdullah Khan and Husain Ali Khan, known as Saiyid brothers. When Farrukhsiyar tried to suppress the powers of the Saiyid brothers, they got him murdered in 1719 AD. After trying three puppet kings in quick succession, they raised Muhammad Shah to the throne.

Muhammad Shah (1719-1748), who reigned for next twenty-nine years, was a weak king who spent most of his time merry-making and having fun, to the absolute neglect of the affairs of the state. For this reason he is popularly known as Muhammad Shah Rangila (Muhammad Shah, the merry monarch). Under his reign the real power was usurped by the nobles. Gradually many provinces seceded from the empire and thus emerged the semi-independent kingdoms of Bengal, Awadh, Hyderabad and Rohilkhand.

Nadir Shah's Invasion: It was during the reign of Muhammad Shah that in 1739, Nadir Shah, the mighty king of Iran, invaded India and defeated the Mughal army in the battle at Kamal. This was followed by the cruel massacre and reckless plunder at Delhi. After a stay of about two months,

Nadir Shah went back to Iran, taking with him immense wealth as well as the Koh-i-Noor diamond and the Peacock Throne of Shahjahan. This invasion by Nadir Shah led to the further disintegration of the Mughal empire.

The successors of Muhammad Shah were kings only in name. Among them the two who deserve attention were Shah Alam (1759-1806) who granted Diwani rights to the British in Bengal, Bihar and Orissa, and Bahadur Shah Zafar (1837-1857) who was the last in the line of Mughal kings. He took part in the 1857 war of Independence and was sent to Rangoon as a prisoner where he died in 1862.

The Marathas: The Maratha movement during the reign of Mughal emperor Aurangzeb developed into a challenging power under Shivaji and posed a great threat to the weak kings of the later Mughal period. These sturdy, capable and brave people were stretched along the Western Ghats, spilling over into the plains of Konkan and across the Deccan into central India. They had a common language, Marathi, a common religion, Hinduism, a strong sense of belonging and national feeling. Shivaji, the great Maratha leader freed them from the Muslim yoke and made them a mighty power which dominated India in the 18th century and contributed to the decline of the Mughal empire.

Shivaji, the founder of the Maratha empire, was born in 1627. His father, Shahji, was a lietholder of Bijapur and his mother, Jijabai, was a highly religious and talented woman. From the very childhood Shivaji came to believe that his mission was to liberate the Hindus and free his country from the Muslim yoke. He conquered some forts in Bijapur state, disposed of the army general of the Sultan of Bijapur, Atzal Khan, in 1659 and after his initial success with the Mughal armies, he was made to make submission to Aurangzeb by the Rajput Raja Jai Singh. A settlement was attempted with Shivaji in Aurangzeb's court.

Agra but it broke down because of the mutual suspicion of both the parties. Shivaji was imprisoned from where he made his dramatic escape. After his daring return from Agra, Shivaji conquered almost all the forts which he had surrendered to the Mughals. He celebrated his coronation in 1674 and shortly thereafter made great expedition into southern India. Shivaji died in 1680 at the age of 53 years having founded an empire which dominated India for about a century and a half.

The Peshwas: The Peshwas came to power in the Maratha kingdom during the reign of Shahu, Shivaji's grandson. 'Peshwa' was the title of the Prime Minister of the Maratha state. Since Shahu was a weak and incompetent ruler, the state power passed on into the hands of his Peshwa Balaji Vishwanath (1713-1720), who founded the Peshwa dynasty and inaugurated an era of Maratha expansion. He was succeeded by his son Bajirao I (1720-1740), a clever statesman, a fine soldier and a strong administrator. During his time the Marathas conquered Malwa, Gujarat and Bundelkhand and strengthened their hold over the Deccan. He died at an early age of 42 years in 1740 and was succeeded by his eighteen-year-old son, Balaji Bajirao (1740-1761). During his Peshwaship the Marathas reached as far as Bihar and Orissa in the east and Punjab in the north. His was a time of the height of the Maratha empire.

The Maratha power, however, suffered from some weaknesses which contributed to its downfall. They lacked a political system which could establish a stable administration. Over the time the Maratha Sardars established their independent principalities and consequently, by the middle of 18th century five distinct Maratha powers, viz., Peshwa at Poona, Gaekwad at Baroda, Bhonsle at Nagpur, Holkar at Indore and Scindia at Gwalior, emerged. The Maratha raids into the territories of other rulers and their policy of ruthlessness and plunder, alienated them from other Indian rulers and the common masses. So when Ahmed Shah Abdali, the successor of the Persian invader Nadir Shah, invaded Punjab and came in direct conflict with the Marathas, a decisive battle was fought at Panipat in 1761, where Abdali gave the Marathas a crushing defeat. Neither the Rajputs nor the Jats nor the Sikhs came to the Maratha support. Once routed, the Marathas lost their supremacy of the north, and whatever unity existed between the five Maratha powers, it was soon dissolved after the Third Battle of Panipat, which heralded the era of the disintegration of the

Maratha empire and the rise of the British influence in India.

The British conquest of India: Even before the Marathas suffered defeat in the Third Battle of Panipat, the era of the British conquest of India had begun. Vasco da Gama's discovery of the sea route to India had attracted trading companies from Portugal, Holland, England, France and Denmark. By the early 18th century, the English and the French East India Companies had ousted the Portuguese, the Dutch and the Spaniards and established their supremacy in the Indo-European trade. However, soon after the conflict arose between them as both of them sought to extend their areas of supremacy by meddling in the political affairs of the local Nawabs. Anglo-French conflict began over the question of succession in "Carnatic" and as a result of war, the English Company replaced the French as the overlords in the state of Carnatic. Nawab Siraj-ud-daulah of Bengal tried to contain the growing influence of the Company, but was defeated and killed by Clive's forces in the Battle of Palasi (Plassey), near Murshidabad in 1757; the main cause of Nawab's defeat being treason by one of his own commanders, Mir Jafar, who had entered into a conspiracy with the English. Mir Jafar was made the Nawab of Bengal by the English and with it the power and influence of the English Company in Bengal expanded. However, when Mir Jafar fell out with the Company, he was deposed and replaced by Mir Qasim as the Nawab of Bengal. But as Mir Qasim tried to consolidate his power and free himself from the yoke of the Company, he was overthrown and turned out of Bengal and Bihar. He took refuge with the Nawab of Awadh, Shuja-ud-daulah, where the Mughal emperor Shah Alam had also taken refuge after the murder of his father Alamgir II. All the three, viz., Shuja-ud-daulah, Mir Qasim and Shah Alam prepared for a battle against the English, and the two armies fought at Buxar in western Bihar in 1764 in which the Nawab of Awadh, having been deserted both by Shah Alam and Mir Qasim, suffered a crushing defeat. Consequently, Shuja-ud-daulah and Shah Alam signed treaties with Clive under which the East India Company was given Diwani of Bengal, Bihar and Orissa which entitled the Company to collect revenue from these provinces. From this time onwards the period of British conquest of India began. In 1772, Warren Hastings became the Governor-General of British territories in India and from 1775 to 1782, the British forces were at war with the Marathas which were largely indecisive. Meanwhile, in the First Anglo-Mysore

War of 1767-69, the British were defeated and peace treaties were signed between both the parties. Soon the Mysore rulers were embittered with the British. Hyder Ali, the ruler of Mysore, attacked the British in 1780 and was supported by the French troops. Hyder Ali died in 1782, but his son, Tipu Sultan carried on the war which ended in 1784 and the pre-war position was restored. Thus, between 1765 and 1785, the British could not gain any new territories in India, though their political influence certainly extended to keep alive the differences among different Indian rulers.

In 1786, Cornwallis was appointed the Governor-General, who initially followed the policy of non-intervention, but soon rallied his troops against Tipu Sultan when he attacked the kingdom of Coorg and Travancore. In this Third Anglo-Mysore War (1790-92), Tipu was defeated and had to surrender large parts of his territories to the British.

With the appointment of Wellesley as Governor-General in 1798, the new wave of British expansion started. Wellesley formalised the policy of giving military help to one Indian state against another in the form of 'subsidiary alliance'. An Indian ruler accepting this subsidiary alliance was allowed to maintain a British force in his state and pay for its maintenance, in lieu of which he had to give some of his territory to the British.

Tipu Sultan, who had shown open sympathy for the French Revolution and sought to secure French help for driving the British out of India, was defeated and killed in 1799, and in his place, the British appointed a puppet king. Carnatic was also taken over by the British.

The Marathas, whose internal conflicts never ceased, were played one against the other by the Britishers. In the war between the Holkar and Scindia, the Peshwa Baji Rao II accepted a subsidiary alliance with the British, and the Britishers drove out Holkar. The combined armies of Scindia and Bhonsle were also defeated both in the south as well as in the north, and Delhi was taken over by the British from the Scindia. So both Bhonsle and Scindia signed the subsidiary alliance, surrendered large parts of their territories to the British and accepted the appointment of British Residents in their states. However, the Holkar was still holding out when Wellesley was recalled. Soon after, peace treaty was signed with Holkar.

Minto's tenure as Governor-General saw further expansion of the British power in India and the neighbouring countries. Conquests of Jawa, Sumatra, Singapore and Malay peninsula laid the

foundations of Britain's naval supremacy in this part of the world. Within India the British power was extended up to river Sutlej.

In the early years of the 19th century, the British decided to subdue the Pindaris, a force of plunderers which had been carrying out raids in many parts of the country and was being helped by many Indian rulers. The British wanted to use the Maratha armies against Pindaris, but the Maratha leaders were actively helping the Pindaris. Thus, the war against Pindaris turned into the Third Anglo-Maratha War (1817 AD) which proved a total disaster for the Marathas. Within a few years Maratha territories passed on into the hands of the British and the Maratha armies were disbanded. Rajputs were also brought under the British influence under the subsidiary alliances.

Between 1824 and 1826, the British fought war with the Burmese who had been extending their influence over Assam. The Burmese were defeated and the British took over the control of Assam. However, the subsequent British efforts to annex Afghanistan could not materialise, but they were able to extend their influence over Sind and annexed it in 1843. However, Punjab under Maharaja Ranjit Singh did not yield and the British had to sign a treaty of friendship with him in 1809. The death of Ranjit Singh in 1839 and the subsequent period of instability and intrigues during the reign of his son, Dalip Singh offered the British an opportunity to extend their influence over Punjab. The First Anglo-Sikh War of 1845 brought Punjab under the British protection though Dalip Singh remained the nominal king. But the revolt during 1848 led to the Second Anglo-Sikh War wherein the Punjab armies were defeated and the British annexed this powerful state built by Maharaja Ranjit Singh.

The British Paramountcy : The British paramountcy was established over India during the tenure of Dalhousie who became the Governor-General of India in 1848. After annexing Punjab, he extended his control over Peshawar and the Pathan tribes in the north-west of India. He also annexed a large part of Burma and thus extended the British empire in the east. The successor of Dalhousie, Canning, tried to extend his control over the Persian Gulf region. But the revolt of 1857 prevented his grand design from materialising. Thus, by 1856, the British conquest and its authority were firmly established.

The paramountcy of the British in India was established through a number of devices such as direct annexation as in the case of Mysore and Sind. The method of subsidiary alliance, though

initially designed to help and protect the local rulers against their wars with the others, also used to create such conditions whereby it led to annexation of these territories by the British. The 'Doctrine of Lapse' was another common device used by Dalhousie and also the later Governor-Generals to take over Indian States. Under the Doctrine of Lapse, any Indian ruler who died without a male heir as a natural successor, his territory automatically passed on into the British hands. The states of Jhansi, Nagpur and Satara were annexed by the British under this Doctrine of Lapse. Nana Sahib, the adopted son of the Peshwa, was denied his legitimate claim.

While the British power gained its heights during the middle of the 19th century, the discontent of the local rulers, the peasantry, the intellectuals, common masses as also of the soldiers who became unemployed due to the disbanding of armies of various states that were annexed by the British, became widespread. This soon broke out into a revolt which assumed the dimensions of the 1857 Mutiny.

The Indian Mutiny of 1857: The British conquest of India, which could be said to have begun with the Battle of Plassey, was practically completed by the end of Dalhousie's tenure in 1856. The conquest of India was by no means a smooth affair as the simmering discontent of the people manifested itself in many localised revolts during this period. However, the Mutiny of 1857, which began with a revolt of the military soldiers at Meerut, soon became widespread and posed a grave challenge to the British rule. Even though the British succeeded in crushing it within a year, it was certainly a popular revolt in which the Indian rulers, the masses and the militia participated so enthusiastically that it came to be regarded as the First War of Indian Independence.

The hundred years of British misrule preceding the great Mutiny had offended the local rulers and the ruled alike. The principle of subsidiary alliance was used as an instrument to play one ruler against the other with the ulterior motive of annexing the territories of both. The doctrine of lapse was a naked violation of Indian traditions and customs to deny the legitimate rights to Indian rulers and to grab their territories. The armies of the annexed states were largely disbanded and the soldiers found themselves out of job. The brave and the learned people who devotedly worked for the Indian rulers and got their patronage were driven out of administration and their land and jagirs were taken over by the British. The peasants were ruined through

exorbitant charges made from them by the new class of landlords established under the zamindari system introduced by the British. The craftsmen were destroyed by the influx of the British manufactured goods. The religion and the caste system which formed the firm foundation of the traditional Indian society was endangered by the British administration. The Indian soldiers as well as people in administration could not rise in hierarchy as the senior jobs were reserved for the Europeans. Thus, there was all-round discontent and disgust against the British rule, which burst out in a revolt by the 'sepoys' at Meerut whose religious sentiments were offended when they were given new cartridges greased with cow and pig fat, whose covering had to be stripped out by biting with the mouth before using them in rifles. The Hindu as well as the Muslim soldiers, who refused to use such cartridges, were arrested which resulted in a revolt by the fellow soldiers on May 9, 1857.

The rebel forces marched towards Delhi and captured it in no time. They proclaimed Bahadur Shah Zafar as the emperor of India. Soon the revolt spread to a wider area and there were uprisings in Uttar Pradesh, Rajasthan, Madhya Pradesh, Maharashtra, Punjab, Bihar, Assam, Orissa, Sind, Hyderabad and Bengal. Though at many places the revolt was only localised, it was widespread in Delhi, Awadh, Rohilkhand, Bundelkhand, Allahabad, Agra, Meerut and western Bihar, where most ferocious battles were fought. The rebellious forces under the commands of Kanwar Singh in Bihar and Bakht Khan at Delhi gave a stunning blow to the British soldiers. In Kanpur, Nana Sahib was proclaimed as the Peshwa and his troops were led by the brave leader Tantia Tope. Rani Lakshmi Bai was proclaimed the ruler of Jhansi who herself led her troops in the heroic battles with the British. The Sikh regiment from Punjab joined the rebels in eastern Uttar Pradesh while in western Uttar Pradesh Wazid Ali Shah's son was put on the throne by the rebels who besieged Lucknow Residency. The Hindus, the Muslims, the Sikhs and all the other brave sons of India fought shoulder to shoulder to throw out the British and recognised Bahadur Shah Zafar as the legitimate emperor of India, who thus emerged as symbol of India's unity and her past glory.

But the revolt, though popular and widespread, was controlled by the mighty British within one year. In September 1858, the British troops regained the control over Lucknow. Rani Lakshmi Bai was driven out of Jhansi and was killed in the

battlefield in June 1858. Kanwar Singh died in April 1858, having sustained severe wounds in the battle. Nana Sahib escaped to Nepal, while Tantiya Topa was captured and hanged after having kept the British troops engaged for two years. Thus, by the end of 1858, the revolt was crushed and Bahadur Shah Zafar was taken as a prisoner and sent to exile in Rangoon, where he died in 1862.

The Queen's Proclamation and the British Paramountcy : Consequent to the Revolt of 1857, many important changes took place in the British Government's policy towards India which sought to strengthen the British rule through winning over the Indian princes, the chiefs and the landlords. Queen Victoria's Proclamation of November 1, 1858 declared that thereafter India would be governed by and in the name of the British Monarch through a Secretary of State. The Governor-General was given the title of Viceroy which meant the representative of the Monarch. The Proclamation also made it clear that (i) the treaties entered into between the native princes and the East India Company would be respected and scrupulously maintained; (ii) the British Government would not embark upon any further conquest or aggrandisement over the territories of the native princes; (iii) the natives of India would obtain the same treatment as is enjoyed by other subjects of the Queen; (iv) there would be no discrimination for the natives on the basis of race or creed in appointment to the public services under the Queen; and (v) the British Government would in no way interfere with their various modes of religious worship. The Queen's proclamation of 1858, thus, constituted an important landmark in India's history. It assured the princes the territorial integrity of their states and secured to the common people of India their full rights as the subjects of the British empire. It also secured to them the right to appointment in public services and the right to freedom of worship without any hindrance or interference from the state.

Apart from these concessions the Mutiny also brought the native discontent to the immediate attention of the British Government. The Indian Councils Act, 1861, added one more ordinary member to the Executive Council which earlier consisted of the Governor-General, four ordinary members and the Commander-in-Chief of the army as an extraordinary member. Legislative Council, which was set up in 1853 and comprised six members in addition to the members of the Executive Council, was also expanded by another six to twelve members, half of which were to be

non-officials. In 1892, the number of additional members in the Legislative Council was increased from 12 to 16, but the official members were continued to be in majority. Local governments in the form of Municipalities and District Boards were also set up. Bureaucracy was strengthened and army was reorganised. Queen Victoria assumed the title of Empress of India and thus gave the British government unlimited powers to intervene in the internal affairs of the Indian states.

Consequently, the dependence of the princely states upon the British government further increased and each succession to the throne of these states had to be approved by the British Monarch or the Viceroy of India. In case of mismanagement, the British could depose a ruler and appoint a successor. In brief, the British paramountcy over India, including the Indian states, was firmly established. The British gave their support to the loyal princes, zamindars and local chiefs but neglected the educated people and the common masses. They also promoted the other interests like those of the British merchants, industrialists, planters and civil servants. The people of India, as such, did not have any say in running the government or formulation of its policies. Consequently, people's disgust with the British rule kept on mounting which gave rise to the birth of Indian National Movement.

The Struggle for Swaraj : The foundations of Indian National Movement were laid by Surendranath Banerjee with the formation of Indian Association at Calcutta in 1876. The aim of the Association was to represent the views of the educated middle class, inspire the Indian community to take a living interest in public affairs and teach the value of united action. The Indian Association was, in a way, the forerunner of the Indian National Congress which was founded in 1885 with the help of A.O. Hume, a retired British official. The first session of the Indian National Congress was held in Bombay in December 1885 under the presidentship of W.C. Bonnerjee and was attended among others by Dadabhai Naoroji and Badruddin Tyabji. The second session of the Congress was held at Calcutta in 1886 under the presidentship of Dadabhai Naoroji where Surendranath Banerjee also joined the organisation. Soon the Congress attracted a galaxy of leaders such as Pherozeshah Mehta, Romesh Chandra Dutt, Gopal Krishna Gokhale and Anand Mohan Bose. The Congress demanded that the Legislative Councils be given more powers, the members of the Councils should be elected representatives of the people, that Indians should be recruited to the

higher posts, that the civil services examinations should be held in India, that economic policies of the Government should be modified to facilitate the growth of Indian industries and that the welfare programmes should be expanded. But the British Government, particularly under Viceroy Curzon, adopted repressive measures and flouted Indian opinion. Under its 'divide and rule' policy, the province of Bengal, which included Bihar and parts of Orissa, was partitioned in 1905 and the Muslim-dominated East Bengal was created. This created a wave of indignation and the Swadeshi and boycott movements were started for undoing the partition of Bengal. Soon the Swadeshi and the boycott movements spread to the rest of the country and assumed the shape of powerful agitation. This attracted the wrath of the British who came out with further repressive measures.

The call for Swaraj : The Congress session at Calcutta in 1906, presided by Dadabhai Naoroji, gave a call for attainment of 'Swaraj' a type of self-government elected by the people within the British Dominion, as it prevailed in Canada and Australia, which were the parts of the British empire. The British could not really stomach this demand and arrested many leaders including Bal Gangadhar Tilak, Lala Lajpat Rai and Bipin Chandra Pal, who were soon released, but Tilak was deported to Burma for six years.

Meanwhile, in 1909, the British Government announced certain reforms in the structure of Government in India which are known as *Morley-Minto Reforms*. Under these reforms, the number of additional members in the Central Legislative Council was raised from 16 to 60, of which 27 were to be elected, not by the people, but by the organisations of landlords and industrialists, and separate representation was given to the Muslims. The number of members of the Provincial Councils also increased.

The Morley-Minto Reforms came as a disappointment as they did not mark any advance towards the establishment of a representative Government. The provision of special representation of the Muslims was seen as a threat to the Hindu-Muslim unity on which the strength of the National Movement rested. So these reforms were vehemently opposed by all the leaders, including the Muslim leader Muhammad Ali Jinnah. Subsequently, in the Delhi Durbar held in 1911 in honour of King George V, two important announcements were made: firstly, the partition of Bengal, which had been effected in 1905, was annulled and, secondly, it was announced that the capital of India was to be shifted from Calcutta to Delhi.

The disgust with the reforms announced in 1909 led to the intensification of the struggle for Swaraj. While, on one side, the extremists led by the great leaders like Bal Gangadhar Tilak, Lala Lajpat Rai and Bipin Chandra Pal waged a virtual war against the British, on the other side, the revolutionaries stepped up their violent activities. There was a widespread unrest in the country. The British Government responded with the Montague-Chelmsford Reforms of 1919, whereby the Central Legislative Council came to have two houses, viz., the Legislative Council and the Council of States. These houses were to have majority of elected members, but again these members were to be elected not by the common people, but only the men with property were given the right to vote. All the important powers remained vested with the Governor-General who was not responsible to the Indian people. The Government of India Act of 1919 introduced 'dyarchy' in the provinces wherein provincial subjects were divided into two parts, viz., the reserved subjects and the transferred subjects. While the reserved subjects were entrusted to the charge of senior civil servants, only the transferred subjects were handed over to the ministers who came from the elected representatives.

These reforms did not satisfy the aspirations of the Indian people who had hoped to achieve Swaraj after the end of the First World War. To add to the already growing discontent among the people, Rowlatt Act was passed in 1919 which empowered the Government to put people in jail without trial. This caused widespread indignation, led to massive demonstrations and hartals, which the Government repressed with brutal measures. The Jallianwala Bagh massacre of April 13, 1919, in which thousands of unarmed peaceful people were gunned down on the order of General Dyer, also aroused the fury of the Indian people which was again silenced by further brutalities by the British Government.

Non-Cooperation and Civil Disobedience : After the First World War, Gandhiji became the undisputed leader of the Congress and the organisation adopted a new form of struggle against the British. The Non-Cooperation Movement launched in 1920 was a great success as even the arrests, firings and brutalities of the British could not stem its tide. Meanwhile, new leaders like Jawaharlal Nehru and Subhash Chandra Bose also emerged on the scene and advocated the adoption of complete independence as the goal of the national movement. Under their influence, the national movement became more vociferous and militant but overall quiet prevailed till about 1927.

The Simon Commission was sent to India in 1927 by the British Government to suggest further reforms in the structure of Indian Government. The Commission did not include any Indian member and the Government showed no intention on accepting the demand for Swaraj. Therefore, it sparked a wave for protests all over the country and the Congress as well as the Muslim League gave a call to boycott it. When the Commission arrived in 1928, there were widespread protests. The crowds were lathicharged and Lala Lajpat Rai, *Sher-e-Punjab*, died of the blows received in an agitation.

Civil Disobedience Movement : The Indian National Congress in its annual session at Lahore in 1929, under the presidentship of Jawaharlal Nehru, adopted a resolution demanding complete independence and decided to launch a Civil Disobedience Movement. It also decided to celebrate January 26 as the Independence Day. The observance of Independence Day on January 26, 1930 was followed by the Civil Disobedience Movement which began with the famous Dandi March by Gandhiji, in which lakhs of people joined. Government tried to repress the movement and resorted to brutal firing, killing hundreds of people. Thousands were arrested along with Gandhiji and Jawaharlal Nehru. But the movement spread to all the four corners of the country. Following this, Round Table Conferences were arranged by the British and Gandhiji attended the second Round Table Conference at London. But nothing came out of the conference and the Civil Disobedience Movement was revived.

Subsequently, the Government of India Act of 1935 was passed, which introduced a measure of provincial autonomy. The powers of the provincial legislatures were increased and the Ministers were made responsible to the legislature. The Congress rejected the Act of 1935, but participated in the 1937 elections. It swept the polls and formed governments in many provinces. But at the break of the Second World War, the Congress ministries resigned on the issue of Indian participation in the war.

Quit India Movement : In 1942, Congress started the 'Quit India Movement' and decided to launch a mass civil disobedience movement to force the British to leave India. However, all the prominent leaders were arrested, the Congress was banned and the police and army were brought out to suppress the movement. Meanwhile, Netaji Subhash Chandra Bose, who had escaped from India in 1941, organised the Indian National Army to overthrow the British from India.

At the conclusion of the Second World War the Labour Party, under Prime Minister Attlee came to power in Britain. The Labour Party was largely sympathetic towards Indian people in their struggle for freedom. A Cabinet Mission was sent to India in March 1946 which, after a careful study of the Indian political scenario, proposed the formation of an interim Government and convening of a Constituent Assembly comprising members elected by the provincial legislatures and nominees of the Indian states. An interim Government was formed which was headed by Jawaharlal Nehru. The Muslim League refused to participate in the deliberations of the Constituent Assembly and pressed for the separate state of Pakistan. Lord Mountbatten, the Viceroy of India, presented a plan for the division of India into India and Pakistan, and the Indian leaders had no choice but to accept the division, as the Muslim League was adamant.

Thus, India became free on August 15, 1947 and Punjab and Bengal were partitioned to carve out Pakistan on the basis of communal majority. The Constituent Assembly completed its work on November 26, 1949 and gave the new Constitution which came into force from January 26, 1950 when India became a Sovereign Democratic Republic.

Governors-General of India

1772-1785	Warren Hastings
1786-1793	Lord Cornwallis
1793-1798	Sir John Duple
1798-1805	Lord Wellesley
1807-1813	Lord Amherst
1813-1823	Lord Hastings
1823-1835	Lord William Bentinck
1844-1848	Lord Dalhousie
1848-1855	Lord Canning
1855-1858	Lord Dalhousie

Viceroy of India

1858-1862	Lord Dalhousie
1862-1869	Lord Lytton
1869-1884	Lord Ripon
1884-1888	Lord Dufferin
1888-1894	Lord Curzon
1894-1899	Lord Elgin
1899-1905	Lord Minto
1905-1910	Lord Hardinge
1910-1916	Lord Chelmsford
1916-1921	Lord Canning
1921-1926	Lord Buxton
1926-1931	Lord Irwin
1931-1936	Lord Willingdon
1936-1943	Lord Linlithgow
1943-1947	Lord Mountbatten
1947 (Mar. 13) Aug. 14,	Lord Mountbatten

Governors-General of Indian Union

1947 (August 15)–1948 (June 20)
Lord Louis Mountbatten
1948 (June 21)–1950 (January 25)
C. Rajagopalachari

Presidents of India

1950–1962 Rajendra Prasad
1962–1967 S. Radhakrishnan
1967–1969 Zakir Hussain
1969–1974 V.V. Giri
1974–1977 Fakhruddin Ali Ahmed
1977–1982 N. Sanjiva Reddy
1982–1987 Zail Singh
1987–1992 R. Venkataraman
1992–1997 S.D. Sharma
1997– K.R. Narayanan

Vice-Presidents of India

1952–1962 S. Radhakrishnan
1962–1967 Zakir Hussain
1967–1969 V.V. Giri
1969–1974 G.S. Pathak
1974–1979 B.D. Jatti
1979–1984 M. Hidayatullah
1984–1987 R. Venkataraman
1987–1992 Dr. S.D. Sharma
1992–1997 K.R. Narayanan
1997– Krishan Kant

Prime Ministers of India

August 15, 1947– Jawaharlal Nehru
May 27, 1964
May 27, 1964– Gulzari Lal Nanda
June 9, 1964 (Acting)
June 9, 1964– Lal Bahadur Shastri
January 11, 1966
January 11, 1966– Gulzari Lal Nanda
January 24, 1966 (Acting)
January 24, 1966– Indira Gandhi
March 24, 1977
March 24, 1977– Morarji Desai
July 28, 1979
July 28, 1979– Charan Singh
January 14, 1980
January 14, 1980– Indira Gandhi
October 31, 1984
October 31, 1984– Rajiv Gandhi
December 2, 1989
December 2, 1989– V.P. Singh
November 11, 1990
November 11, 1990– Chandra Shekhar
June 21, 1991
June 21, 1991– P.V. Narasimha Rao
May 16, 1996
May 16, 1996– Atal Bihari Vajpayee
June 1, 1996
June 1, 1996 – H.D. Deve Gowda
April 21, 1997
April 21, 1997 – I.K. Gujral
March 19, 1998
March 19, 1998 – Atal Bihari Vajpayee

BC

3000-1500 : Indus Valley Civilisation
576 or 563 : Birth of Gautama Buddha
527 : Mahavira attains Nirvana
327-326 Alexander's Invasion of India
325 : Alexander leaves India
313 : Accession of Chandragupta Maurya on the throne according to Jain traditions
305 : Defeat of Seleucus at the hands of Chandragupta Maurya
273 : Accession of Ashoka
273-232 : Reign of Ashoka
261 : Conquest of Kalinga
187 : Rise of the dynasty of Pushyamitra
145-101 : Reign of Elara, the Chola King of Ceylon
58 : Epoch of Vikrami era

AD

78 : Epoch of Saka era
120 : Accession of Kanishka
320 : Commencement of Gupta era
360 : A Ceylonese embassy comes to the court of Samudragupta
380 : Accession of Vikramaditya
405-411 : Travels of Fa-hien
415 : Accession of Kumara Gupta-I
455 : Accession of Skanda Gupta
606 : Accession of Harshavardhana
609 : Coronation of Pulakesin-II
641 : Harsha's embassy to China
642 : Death of Pulakesin-II
643 : Harsha's meeting with Hiuen Tsang
647 : Death of Harsha
712 : First Arab invasion of Sind

836 : Accession of King Bhoja of Kannauj
 985 : Accession of Rajaraja the Great Chola
 998 : Accession of Sultan Mahmud
 1001 : First invasion of India by Mahmud of Ghazni
 1012-44 : Reign of Rajendra Chola
 1025 : Destruction of Somnath Temple by Mahmud of Ghazni
 1191 : First Battle of Tarain (or Taraori)
 1192 : Second Battle of Tarain (or Taraori)
 1206 : Accession of Qutub-ud-Din to the throne of Delhi
 1210 : Death of Qutub-ud-Din
 1221 : Invasion of Mongols under Chagiz Khan
 1236 : Accession of Razia Sultana to the throne of Delhi
 1240 : Death of Razia Sultana
 1287 : Death of Balban
 1296 : Accession of Ala-ud-Din Khilji
 1316 : Death of Ala-ud-Din Khilji
 1325 : Accession of Muhammad-bin Tughlaq
 1333-34 : Arrival of Ibn-Batutah
 1336 : Foundation of Vijayanagar Empire in South India
 1351 : Accession of Firoz Shah
 1398 : Invasion of Timur Lang
 1469 : Birth of Guru Nanak
 1494 : Accession of Babar in Farghana
 1498 : First voyage of Vasco-da-Gama.
 Discovery of sea route to India via the Cape of Good Hope
 1509 : Accession of Krishnadeva Raya
 1509-27 : Reign of Rana Sanga in Mewar
 1526 : First Battle of Panipat; Foundation of Mughal rule in Northern India
 1527 : Battle of Khanua
 1540 : Battle of Kannauj
 1542 : Birth of Akbar at Amarkot
 1545 : Death of Sher Shah
 1556 : Second Battle of Panipat
 1562 : Akbar marries a princess of Amber
 1565 : Battle of Talikota
 1576 : Battle of Haldighat; Rana Pratap defeated by Akbar
 1579 : Promulgation of Infallibility Decree
 1597 : Death of Rana Pratap
 1600 : Establishment of East India Company
 1605 : Death of Akbar
 1606 : Execution of Guru Arjun Dev
 1611 : Jehangir marries Nur Jahan
 1616 : Sir Thomas Roe visits Jehangir
 1627 : Birth of Shivaji
 1628 : Shahjahan becomes Emperor
 1631 : Death of Mumtaz Mahal

1634 : The English were permitted to trade in Bengal
 1649 : Persians recover Kandhar
 1657 : War of Succession among sons of Shahjahan
 1658 : Battle of Dharmat
 1659 : Battle of Samugarh; Aurangzeb's accession to the throne
 1664 : Shivaji crowns himself
 1666 : Shivaji visits the Mughal court of Aurangzeb; his imprisonment and escape; Birth of Guru Gobind Singh
 1674 : Shivaji assumes the title of Chhatrapati
 1675 : Execution of Teg Bahadur, the first Guru of Sikhs
 1680 : Death of Shivaji
 1707 : Death of Aurangzeb
 1708 : Death of Guru Gobind Singh
 1717 : Battle of Kirkee
 1739 : Nadir Shah invades India
 1757 : Battle of Plassey, establishment of British political rule in India at the hands of Lord Clive
 1760 : Battle of Wandiwash
 1761 : Third Battle of Panipat
 1764 : Battle of Buxar
 1770 : The Great Bengal Famine
 1773 : The Regulating Act
 1776 : Treaty of Purandar
 1780 : Birth of Maharaja Ranjit Singh
 1784 : Pitt's India Act
 1785 : Resignation of Warren Hastings
 1793 : Permanent Settlement of Bengal
 1802 : Treaty of Bassein
 1809 : Treaty of Amritsar
 1830 : Raja Ram Mohan Roy, founder of Brahmo Samaj, visits England
 1833 : Death of Raja Ram Mohan Roy
 1839 : Death of Maharaja Ranjit Singh
 1845 : Battle of Sabraon
 1853 : First railway line opened in India from Bombay to Thana
 1857 : Indian Mutiny
 1861 : Indian Councils Act; Birth of Rabin Dr Nath Tagore
 1869 : Birth of Gandhi
 1876-77 : Delhi Darbar
 1883 : The Ilbert Bill
 1885 : Foundation of Indian National Congress
 1889 : Birth of Jawaharlal Nehru
 1892 : Indian Councils Act
 1904 : British expedition to Tibet
 1905 : First partition of Bengal under Lord Curzon
 1906 : Foundation of Muslim League
 1909 : Minto-Morley Reforms

1911 : Delhi becomes the capital
 1915 : World War I started
 1918 : World War I ended
 1919 : Montague-Chelmsford Reforms;
 Jallianwala Bagh massacre at Amritsar; Rowlatt Act
 1920 : Khilafat Movement
 1921 : Chauri Chaura outrage in U.P.
 1927 : Broadcasting starts in India
 1928 : Death of Lala Lajpat Rai (*Sher-e-Punjab*)
 1929 : Resolution of complete Independence passed at Lahore Congress
 1930 : Dandi March by Mahatma Gandhi (6 April)
 1931 : Gandhi-Irwin Pact
 1935 : Government of India Act
 1937 : Provincial Autonomy; Formation of popular governments
 1939 : World War II started (September 1)
 1941 : Death of Rabindra Nath Tagore; escape of Subhash Chandra Bose from India
 1942 : 'Quit India' Movement (8 August)
 1943 : Bengal famine; Indian National Army formed
 1945 : Trial of INA at Red Fort; Shimla Conference; Failure of Wavell Plan; World War II ended
 1946 : British Cabinet Mission visited India, interim government formed at the Centre
 1947 : Indian independence; India partitioned
 1948 : Assassination of Mahatma Gandhi (January 30); Integration of princely States
 1949 : Ceasefire in Kashmir; Enactment of Indian Constitution (November 26)
 1950 : India becomes Republic (January 26)
 1951 : First Five-Year Plan launched; first Asian Games held at Delhi
 1952 : First General Elections to the Lok Sabha
 1953 : Mount Everest conquered by Tenzing Norgay and Sir Edmund Hillary
 1954 : Panchsila signed by India and China
 1956 : Reorganisation of Indian States on linguistic basis; Second Five-Year Plan launched
 1957 : Second General Elections
 1959 : Dalai Lama escapes to India; India's relations with China worsen as a result of latter's claim over Indian territories in NEFA and Ladakh
 1961 : Third Five-Year Plan launched; Liberation of Goa from Portuguese possession
 1962 : Third General Elections; Chinese aggression (October 20)
 1964 : Death of Jawaharlal Nehru (May 27); Lal Bahadur Shastri becomes Prime Minister
 1965 : Indo-Pak war; ceasefire

1966 : Indo-Pak summit at Tashkent; Death of Lal Bahadur Shastri (January 11); Mrs. Indira Gandhi becomes Prime Minister of India; Formation of Haryana state
 1967 : Fourth General Elections
 1969 : Death of President Zakir Hussain; Split in Indian National Congress; Nationalisation of Banks
 1970 : Fourth Lok Sabha dissolved
 1971 : General Elections; New Congress wins; Fifth Lok Sabha comes into being; Indo-Pak war; Birth of Bangladesh; Himachal Pradesh obtains statehood
 1972 : Assam State reorganised, Meghalaya and Tripura become full-fledged States and two Union territories, Arunachal Pradesh and Mizoram, inaugurated; Shimla agreement signed between Indira Gandhi and Z.A. Bhutto (July 2); Death of C. Rajagopalachari
 1973 : Manekshaw promoted as first Indian Field Marshal; Mysore state renamed Karnataka
 1974 : India becomes sixth nuclear power by exploding nuclear device at Pokhran in Rajasthan (May 18); Fakhruddin Ali Ahmed elected President of India.
 1975 : Sikkim joins India as 22nd State; India enters space age; President declares emergency due to "internal disturbance threat".
 1976 : India-China relations improve with exchange of ambassadorial representation; India-Pakistan relations normalised with re-establishment of diplomatic relations at the ambassadorial level, restoration of severed links like air, road and rail transport
 1977 : Mr. Fakhruddin Ali Ahmed, President of India, passes away (February 11); Elections to Sixth Lok Sabha (March 16-20); Mr. Morarji Desai sworn in as Prime Minister of India; Mr. N. Sanjiva Reddy sworn in as sixth President of India (July 25)
 1978 : High value notes of the denomination of Rs. 1,000, Rs. 5,000 and Rs. 10,000 demonetised (January 16); Second split in the Congress and formation of Congress(I) under the leadership of Mrs. Indira Gandhi, former Prime Minister (January 2); Mrs. Indira Gandhi wins Lok Sabha by-election from Chikmagalur (November 5); Mrs. Indira Gandhi sentenced to jail and expelled from Lok Sabha for committing contempt of Parliament (December 19) and later released on December 26 on prorogation of Lok Sabha.
 1979 : Mr. Morarji Desai resigns from Prime Ministership (June 15); Mr. Charan Singh becomes Prime Minister (July 28); Mr. M. Hidayatullah, former Chief Justice of India, becomes Vice-President of

India (August 31); Lok Sabha dissolved and mid-term poll ordered (August); Loknayak Jayaprakash Narayan passes away (October 8).

1980 : Mrs. Indira Gandhi is sworn in as Prime Minister of India (January 14); Nobel Peace Prize winner Mother Teresa gets Bharat Ratna (January 25); Birth of Bharatiya Janata Party out of the third split in the Janata Party (April 6); Six more leading commercial banks are nationalised (April 15); Sanjay Gandhi dies in air crash (June 23)

1981 : Third split in the Indian National Congress when Jagjivan Ram forms his own Congress (August 5); Dal Khalsa activists hijack Indian Airlines plane to Lahore; hijackers are captured by Pakistan commandos (September 29).

1982 : Sheikh Abdullah passes away (September 8); Indian Air Force celebrates golden jubilee (October 7); J. R. D. Tata re-enacts flight of 1932 (October 15); Acharya Vinoba Bhave dies (November 15); Ninth Asian Games opened in New Delhi (November 19); Second Indian expedition team lands in Antarctica (December 28).

1983 : Bharat Ratna posthumously awarded to Acharya Vinoba Bhave (January 25); First unit of the Kalpakkam atomic power station near Madras commissioned by the Prime Minister (July 23); India's multi-purpose satellite, INSAT-1B, successfully blasted off aboard space shuttle 'Challenger' from Cape Canaveral, U.S.A. (August 30); Commonwealth Heads of Government Meeting (CHOHM) in New Delhi (November 23-29); Sunil Gavaskar surpasses Don Bradman's record of 29 Test centuries when he completes his 30th Test century in Madras Test against West Indies (December 28).

1984 : Sqn. Ldr. Rakesh Sharma becomes first Indian cosmonaut to go into space (April 3); Bachendri Pal becomes first Indian woman to scale Mount Everest (May 23); R. Venkataraman becomes seventh Vice-President (August 31); Mrs. Indira Gandhi assassinated (October 31); Rajiv Gandhi sworn in as new Prime Minister (October 31); Gas kills over 2,200 in Bhopal (December).

1985 : Rajiv Gandhi launches centenary celebrations of Indian National Congress (May 6); Five-day week for Government staff begins (June 3); Air-India Boeing 'Kanishka' en route from Montreal to Bombay crashes (June 23); Accord on Punjab signed between the Prime Minister Rajiv Gandhi and Akali Dal President H.S. Longowal (July 24); Accord on Assam between Prime Minister Rajiv Gandhi and Assam student leaders (August 15); H.S. Longowal shot dead (August 20); Kalpakkam FBTR dedicated to nation (Dec. 16); Congress completes 100 years (Dec. 28).

1986 : Former Army Chief K.M. Cariappa made Field Marshal (January 14); Ace Mountaineer Tenzing Norgay passes away (May 9); India's first test tube baby born (June 14); Centre and Laldenga sign Mizos accord (June 30); Former Army Chief Gen. A.S. Vaidya shot dead (August 10); Rajiv Gandhi survives assassination attempt at Raj Ghat (October 2); Second SAARC summit begins at Bangalore (November 16).

1987 : Mizoram and Arunachal Pradesh become 23rd and 24th States of India (February 20); Mishra Commission indicts Delhi Police for their failure to handle Delhi riots in November 1984 (February 23); Sunil Gavaskar becomes the first batsman in the world to complete 10,000 Test runs in a match against Pakistan at Ahmedabad (March 7); Mr. V.P. Singh quits Union Cabinet (April 12); Lok Dal leader and former Prime Minister Charan Singh passes away (May 29); Goa becomes 25th State of India (May 31); Mr. V.P. Singh expelled from Congress (I) (July 19); Mr. R. Venkataraman sworn in President of India (July 25); India and Sri Lanka sign accord in Colombo (July 29); Mr. Rajiv Gandhi escapes bid on his life at Colombo (July 30); Frontier Gandhi, Khan Abdul Ghaffar Khan conferred Bharat Ratna Award (August 14); Dr. Shankar Dayal Sharma sworn in Vice-President of India (September 3); Chetan Sharma performs first ever hat-trick in World Cup against New Zealand (October 31); Australia emerge champions in Fourth World Cup finals at Calcutta (November 8); Tamil Nadu Chief Minister M.G. Ramachandran passes away (December 24).

1988 : 'Prithvi', India's first-ever tactical surface-to-surface missile test-fired from Sriharikota (February 25); 'Operation Black Thunder' in which 151 terrorists surrender in the Golden Temple complex in Amritsar (May 15); National badminton champion Syed Modi shot dead (July 29); Earthquake in several parts of Bihar, Nepal and some areas of north-east in which more than 750 people killed (August 21); Opposition leaders formally launch seven-party National Front in Madras (September 17); Contingent of Indian army flown to Maldives to help President Abdul Gayoom crush a coup attempt (November 2); Lok Sabha passes Constitution Amendment Bill reducing voting age from 21 to 18 years (December 15).

1989 : DMK sweeps to power in Tamil Nadu (January 22); Bhopal gas tragedy case settled in Supreme Court for 470 million dollars (February 14); 'Agni' launched at Chandipur-on-Sea in Orissa (May 22); 'Trishul', India's surface-to-surface missile successfully test-fired (June 5); Six top Indian cricketers barred from playing for one year

(August 6); India carries out second test launch of 'Prithvi' missile (September 27); Two major Constitution Amendment Bills strengthening the Panchayat Raj and Nagar Palika Institutions fall in the Rajya Sabha (October 13); ISRO launches first stage giant booster motor of the four-stage PSLV (October 21); Rajiv Gandhi resigns as Prime Minister (November 29); V. P. Singh sworn in as the seventh Prime Minister of India and Devi Lal as his deputy (December 2).

1990 : Farooq Abdullah resigns as Chief Minister of J&K (Jan. 19); Governor's rule imposed in J&K (Jan. 20); Emakulam is declared the first totally literate district in the country (Feb. 4); A-320 airbus crashes in Bangalore in which 91 persons die (Feb. 15); J&K Assembly is dissolved (Feb. 19); Devi Lal is dismissed from Union Cabinet (Aug. 2); 'Akash' is test-fired (Aug. 16); Janata Dal splits, dissident MPs elect Chandra Shekhar as leader (Nov. 6); V.P. Singh resigns after losing vote of confidence in Lok Sabha (Nov. 9); Chandra Shekhar is sworn in as Prime Minister and Devi Lal as Deputy Prime Minister (Nov. 11); President's rule imposed in Assam (Nov. 29); 'Nag' is test-fired successfully (Nov. 30); President's rule in Goa (December 15).

1991 : Thirteenth decennial census begins (Feb. 9); President accepts Janata Dal (S) Government's resignation (March 6); Fifteen-month-old ninth Lok Sabha is dissolved; Mr. Chandra Shekhar is asked to continue as caretaker Prime Minister (March 13); Mr. Morarji Desai gets Pakistan's highest civilian honour, Nishan-e-Pakistan (May 18); Mr. Rajiv Gandhi is assassinated by a woman wearing 'belt bomb' at Sriperumbudur in Tamil Nadu (May 21); Rajiv Gandhi and Sardar Patel are awarded Bharat Ratna posthumously (June 17); P.V. Narasimha Rao Cabinet is sworn in (June 21); Indo-Soviet treaty for peace, friendship and cooperation is extended by 20 years (Aug. 8); India's second remote sensing satellite IRS-1B is launched successfully from Baikonur cosmodrome (Aug. 29); Narasimha Rao Government issues notification amending the National Front Government's proposed 27 per cent reservations for SEBC, adding ten per cent more for economically backwards (Sept. 25); Major earthquake rocks Uttarakashi area, killing at least 500 people (Oct. 20); Prime Minister presents 1990 Jnanpith award to Prof. Vinayak Krishnan Gokak (Nov. 1); Surface-to-air missile 'Trishul' is successfully test-fired (Nov. 2); Supreme Court upholds Anti-Detection Law (Nov. 12); Supreme Court quashes Cauvery ordinance of Karnataka Government (Nov. 22); Government announces

Legislative Assembly and Council of Ministers for Dethi (Dec., 5).

1992 : 23rd Film Festival of India held in Bangalore (Jan. 10-20); Congress sweeps to power in Punjab in Assembly elections (Feb. 21); Beant Singh is installed Chief Minister of Punjab; Eighth Plan is launched (April 1); 'Prithvi' is successfully test-fired at Chandipur-on-Sea (May 5); ITBP team scales Mount Everest (Sagarmatha) which includes Santosh Yadav who becomes second Indian woman to scale the world's highest peak (May 11); ASVL blasts oil from Sriharikota (May 20); Bengali poet Subhash Mukhopadhyaya gets Jnanpith Award for 1991 (May 23); Tin Bigha corridor linking Bangladesh and India through Dahagram and Angarpota is opened (June 26); Punjab police, para-military forces and Army launch "Operation Mand" to flush out militants in Amritsar district (June 30); INSAT-2A satellite is shot into space from Kourou (July 10); INSAT-2A attains final in-orbit configuration (July 16); Dr. Shankar Dayal Sharma is sworn in as the ninth President of India (July 25); Golden Jubilee of "Quit India" Movement (Aug. 9); INSAT-2A placed in its orbital position (Aug. 12); Tenth successful launch of "Prithvi" missile from Chandipur-on-Sea (Aug. 18); Lok Sabha passes 71st Constitution Amendment Bill including Nepali, Konkani and Manipuri in Eighth Schedule (Aug. 20); India and Britain sign extradition treaty for confiscation of terrorist funds (Sept. 22); Sukha and Jinda are hanged at Yerawada Jail in Pune (Oct. 9); Kar sevaks demolish Babri Masjid in Ayodhya (Dec. 6); The Union Government imposes ban on five organisations—RSS, VHP, Bajrang Dal, Jamaat-e-Islami and the Islamic Sevak Sangh—for promoting disharmony (Dec. 10); Panchayat Raj and Nagarpalika Bills are passed (Dec. 22).

1993 : President promulgates ordinance acquiring 67.33 acres of land in and around the Ram Janmabhoomi-Babri Masjid complex in Ayodhya (January 7); Capitation fee is abolished with a judgement of the Supreme Court (February 4); Orissa Government reserves one-third of vacancies in public services for women (March 13); Government accepts expert committee's report on 'creamy layer' (March 16); Supreme Court slays the M.P. High Court verdict on Central rule in Madhya Pradesh (April 2); Hijacking of Indian Airlines Delhi-Srinagar Boeing 737 (April); Ms Santosh Yadav of Indo-Tibetan Border Police climbs Mount Everest and becomes first woman in the world to scale the highest peak twice (May 10); Allahabad High Court suspends ban on Rashtriya Swayamsevak Sangh (May 18);

Cryogenic rocket engine deal with Russia is frozen under pressure from the U.S. (July 16); Second Indian-made multipurpose satellite INSAT-2B blasts off into space by Ariane launch vehicle from Kourou (French Guyana) (July 23); INSAT-2B becomes fully operational (August 13); Job quota for OBCs becomes operative (September 8); PSLV launch fails after blast from Sriharikota (September 10); Over 30,000 persons are killed and 10,000 injured in earthquake in Maharashtra (September 30); Under a Presidential Ordinance, Government sets up multi-member Election Commission (October 1); Supreme Court gives primacy to Chief Justice for appointment of judges (October 6); India and South Africa re-establish diplomatic and consular relations (November 22); President's rule in Manipur imposed (December 31).

1994 : Malhotra Committee recommends privatisation of insurance industry (Jan. 7); President gives assent to the Bill making Election Commission a multi-member body (Jan. 7); Parmacharya of Kanchi Kamakoti Peetam, 100-year-old Sri Chandra-sekharendra Saraswati Swamikal, is dead (Jan. 8); Justice Narula committee recommends immediate police action against senior politicians indicted for their complicity in November 1984 riots (Jan. 10); Marathwada University is renamed "Dr. Babasaheb Ambedkar Marathwada University" (Jan. 14); Singapore Premier, Mr. Goh Chok Tong, is the chief guest at the Republic Day celebrations (Jan. 26); Kapil Dev levels Richard Hadlee's record of 431 wickets in Bangalore (Jan. 30); Kapil Dev becomes world's highest Test scalper when he takes his 432nd wicket against Sri Lanka (Feb. 8); Kapil Dev becomes the first bowler to take 250 wickets in one-day internationals (March); Panchayati Raj Act becomes "operational" (April 23); ASLV-4D is launched from Sriharikota (May 4); Centre bans capitation fee (May 21); 40th anniversary of Panchsheel (June 27); President gives approval to the Tamil Nadu Bill protecting 69 per cent reservations for backward classes, SCs and STs in Tamil Nadu (July 19); Railway Passengers Insurance Scheme comes into effect (August 1); PSLV-D2 is successfully launched from Sriharikota (October 15); President gives assent to Karnataka Reservation Bill providing for 73 per cent reservations for SCs, STs and OBCs (October 23); India wins Willis World Series Cricket Cup in Calcutta (Nov. 5); Aishwarya Rai crowned Miss World 1994 (Nov. 19); more than 100 people are killed in Nagpur stampede (Nov. 23).

1995 : Second unit of Kakrapar atomic power station near Surat goes critical (Jan. 8); Haryana-

bomb Kalpana Chawla is chosen to become the first Indian woman to go up in space (Jan. 16); Morarji Desai dies in Bombay (Apr. 10); Border trade between India and Myanmar is opened (April 12); Flight trial of 'Akash' is carried out at Chandipur-on-Sea in Orissa (Apr. 21); Supreme Court asks Union Government to set up a uniform civil code for all citizens (May 10); Charar-e-Sharif shrine near Srinagar in Jammu & Kashmir is burnt down by Pakistan-trained mercenaries (May 11); Ang Rita climbs Mount Everest for ninth time (May 17); Parliament passes Constitution (86th Amendment) Bill providing reservation of seats for the promotion of Scheduled Castes and Scheduled Tribes employees in Government service (June 2); Ms. Mayawati is sworn in as 16th Chief Minister of U.P. (June 3); Indian and U.S. armies commence joint training exercise (June 7); Geologists discover new deposit of uranium in North Eastern Meghalaya (June 29); Dilip Kumar is selected for Dada Saheb Phalke award (July 12); Bengali litterateur and Jnanpith awardee Ashapurna Devi dies in Calcutta (July 13); Mohammed Yunus is selected for Rajiv Gandhi National Sadbhavana Award (July 20); Vohra Committee reveals network of mafia running a parallel government pushing the state apparatus into irrelevance (Aug. 1); Prime Minister P. V. Narasimha Rao announces National Social Assistance Programme on the Republic Day (Aug. 15); India and China agree to pull back their troops in close proximity to Sumdorong Chu Valley in eastern sector (Aug. 20); N. Chandrababu Naidu is appointed Andhra Pradesh Chief Minister (Sept. 1); Pakistan declines to permit the laying of the Iran-India mega gas pipeline through its territorial waters (Sept. 14); India and the Central Asian Republic of Turkmenistan sign five agreements for economic cooperation (Sept. 20); Mahatma Gandhi peace award is presented to Japanese poet, lecturer and author Dr. Hogen Fukunaga (Oct. 2); Godman Chandraswamy denies before Jain Commission of Inquiry, hand in Rajiv Gandhi killing (Oct. 7); India is re-elected to the Council of Food and Agriculture Organisation for another two-year term from January 1997 (Nov. 1); India successfully tests short-range surface-to-surface missile 'Trishul' at Chandipur-on-Sea (Nov. 5); Supreme Court makes doctors accountable for any act of "medical negligence" and rules that they should be sued for compensation (Nov. 13); India's first elevated train is launched in Madras (Nov. 16); Pension scheme for 1.8 million provident fund subscribers

engaged in the private sector comes into operation (Nov. 16); India's first own fighter plane LCA rolls out of the hangar at Hindustan Aeronautics Limited, Bangalore (Nov. 17); India's third indigenous communications satellite, INSAT-2C, is put into orbit. (Dec. 7); The Supreme Court restores the civilian awards (Dec. 15) India's third highly advanced remote sensing satellite, IRS-1C, is put into orbit by the Russian 'Molniya' rocket that blasts off from the Baikonur cosmodrome in Kazakhstan (Dec. 28).

1996 : The 10-day 27th International Film Festival of India begins in New Delhi (Jan. 10); Former President of Tanzania; Dr. Julius Nyerere, receives the Gandhi Peace Prize for 1995. India agrees in principle to open a second transit route at Phulwari on the Indo-Bangladesh border for giving easy access to export of Nepalese goods (Jan. 27); According to the Jawaharlal Nehru Planetarium, Bangalore, a new comet "Hayakutake" is fast approaching the Sun (Feb. 11); The 44-metre-tall 283-tonne PSLV-D3 on its third and final developmental flight, places the 922 kg IRS-P3 to its "precise" orbit (Mar. 21); A joint-Indo-U.S. naval exercise code-named 'Malabar' the third in the series, is launched in the Arabian Sea (Mar. 26); India is elected to three crucial bodies of the Economic and Social Council (ECOSOC) (May 3); India elected to the International Narcotic Board along with Japan, Pakistan, Colombia, Philippines, France, Iran and the U.S. (May 4); Mr. Atal Behari Vajpayee is sworn in as Prime Minister (May 16); Former Indian cricket captain and commentator, Ravi Shastri, is appointed UNICEF's national ambassador for children (May 22); India ranks 8th among the nuclear power station operating countries world-wide (June 10); Noted cartoonist R.K. Laxman conferred the Sharad Joshi Samman for 1996 (June 13); India refuses to sign the controversial Comprehensive Test Ban Treaty (CTBT), terming it as "discriminatory" and "woefully inadequate" (June 20); Prohibition comes into force in Haryana (July 1); Mumbai film industry celebrates 100 years of the arrival of cinema in India (July 7); India becomes the first country to host a 'university' on the Internet when NIIT, a pioneer in computer education, launches its 'Netvarsity' (July 14); India emerges as the world's top dairy nation in 1995-96. The city of Madras is to be known as 'Chennai' (July 17); Salal project in Jammu and Kashmir becomes fully operational (Aug. 6); Government constitutes a Disinvestment Commission under the fulltime chairmanship of

Mr. G.V. Ramakrishna, former Member of Planning Commission (Aug. 7); India records a trade deficit of Rs. 15,182 crore for the year ended March 31, 1996—108% more over the previous year (Aug. 9); The uninhabited Rose Island in the middle of Andaman is renamed after Rani Lakshmbai, the Rani of Jhansi (Aug. 15); Indian scientists discover new deposits of gold in Karnataka (Aug. 18); The Defence Research and Development Organisation successfully tests the unmanned aerial vehicle (UAV) system called 'Nishant', following the successful testing of the pilotless target aircraft (PTA) 'Lakshya' last year (Aug. 22); Calcutta, the City of Joy, celebrates its 306th birthday (Aug. 24); Death toll in the Amarnath yatra rises to 160 (Aug. 25); India and Bangladesh agree on "broad principles" to resolve the Ganga water dispute (Sept. 7); India firmly rejects the draft CTBT in the UN General Assembly (Sept. 9); Gold mines are discovered at Sonakhan near Kasdol in Madhya Pradesh (Sept. 22); Diamond deposits are located in Tokpal area of Bastar district of Madhya Pradesh (Sept. 24); Dr. A.T. Ariyaratne, Sri Lankan social scientist, is selected for the Gandhi Peace Prize for 1996 (Oct. 1); Oman abandons the \$ 10-billion gas pipeline project with India due to financial and technological problems (Oct. 6); Dr. Farooq Abdullah, is sworn in as Chief Minister of Jammu and Kashmir for the fourth time (Oct. 9); India and Canada sign an accord for greater cooperation in space research (Oct. 15); "Living on the Edge", Doordarshan's prime time environmental series, is presented the Panda Award, better known as the Green Oscar at the Widescreen Festival, 1996 (Oct. 19); Kamini (Kalpakkam Mini), a 30 KW research reactor, (which uses manmade uranium-233 as fuel) attains 'criticality' (Oct. 29); MP Government announces reservation of 30 per cent for women and increases the upper age limit for them from 33 to 43 years (Nov. 4); All 351 passengers including 231 Indians killed in a collision between a Saudi Airways Boeing 747 with a Kazakh Airways TV-154 in mid-air, 6 km from Charkhi Dadri in Haryana (Nov. 12); Justice M.N. Venkatachalaiah succeeds Justice Ranganath Mishra as Chairman of the National Human Rights Commission (Nov. 22); India and China sign a historical agreement that commits both sides not to attack each other or cross the Line of Actual Control, reduce troops and armament presently deployed to man the India-China border and to seek a fair, reasonable and mutually acceptable settlement of the boundary question (Nov. 29);

The golden jubilee of the Constituent Assembly's first sitting is celebrated (Dec. 9); India and Bangladesh sign landmark pact on sharing of Ganga waters (Dec. 12); 'Vijay Divas' is celebrated all over the country to mark the Silver Jubilee of the victory of the joint command of the Indian Armed Forces and Mukti Bahini in the liberation of Bangladesh (Dec. 16); The Cauvery Water Disputes Tribunal, under the newly appointed Chairman, Mr. Justice N.P. Singh, resumes work after a gap of over five months (Dec. 17); The 35th anniversary of Goa liberation day is celebrated (Dec. 19).

1997 : Supreme Court rules that Government is empowered to regulate the affairs of Hindu Temples to ensure proper administration (Jan. 14); Union Cabinet approves setting up of a Telecom Regulatory Authority and a National Environment Appellate Authority (Jan. 15); According to the Registrar General of India, India will be the most populous nation by 2040. The population is expected to jump from the present 95 crore to over 126 crore by 2016 (Jan. 18); Nation pays homage to Subhash Chandra Bose on his birth centenary (Jan. 23); India emerging as a major power in South & South East Asia, according to former U.S. Secretary of State Henry Kissinger (Jan. 28); The Fifth Pay Commission raises the retirement age to 60 years, hikes house rent allowance to 30 per cent of the top of the grade, proposes a minimum salary of Rs. 2,440 and a maximum of Rs. 26,000 per month, and a drastic cut in the number of gazetted holidays from 17 to 3 a year, etc. (Jan. 30); J & K CM, Dr. Farooq Abdullah suggests the Line of Control to be made an international border, as a solution of Kashmir problem (Feb. 4); First ever peaceful polls are held for Punjab Vidhan Sabha in 17 years with 66% voter turn-out (Feb. 7); Punjab Government decides to provide free electricity to tubewells and free canal water for irrigation (Feb. 14); Major fire breaks out at ONGC's Mandapetta oilfield (East Godavari) of Andhra Pradesh (Feb. 19); World Bank agrees in principle to lend \$ 40 million to Andhra Pradesh for implementation of the "Janambhoomi" programme of self help by the people (Feb. 24); Bangladesh & Chakma refugee leaders sign an agreement for repatriation of 50,000 Chakma refugees sheltered in six camps in Tripura (Mar. 9); PM, Deve Gowda and President Nelson Mandela sign the "Red Fort Declaration" on a Strategic Partnership between India and South Africa (March 28); India & Oman

sign an agreement on \$ 1,106 million fertiliser joint venture (April 2); I.K. Gujral appointed India's 12th Prime Minister (Apr. 20); Union Government considering hike in petrol prices, diesel and cooking gas (5% each), kerosene (20%) and subsidies on diesel & LPG to be phased out in 2-3 years (May 19); During talks with visiting Indian PM, Nepalese PM demands withdrawal of India's military post from Kalapani, situated on the trijunction of India, China & Nepal (June 5); Government launches black money declaration scheme—the Voluntary Disclosure of Income Scheme 97 (VDIS) w.e.f. 1.7.97 (June 18); International donors & major financial institutions pledge \$ 6.7 billion as development aid to India for 1996-97 (June 25); USA & India sign a new bilateral treaty for extradition of fugitive offenders. Another such treaty is signed with Hong Kong also (June 28); PM Gujral inaugurates India's first Science City in Calcutta (July 1); Jania Dal splits into J.D. & RJD (July 5); Planners set a target of 225 MT of foodgrains for the terminal year of 9th Plan (1997-2002) envisaging a compounded annual growth of 4.5% over the next five years (July 9); Most proposals of 5th Pay Commission accepted by government; no increase in retirement age, minimum family pension raised (July 19); India rejects Nepal's f-card proposal to curb the movement of undesirable elements on 1750 km long open Indo-Nepal border (July 22); Government notifies Prasar Bharti Act w.e.f. 15.9.97 (July 23); K.R. Narayanan sworn as the 10th President of India and Mrs. Rabri Devi as Bihar CM (July 26); Supreme Court issues guidelines to prevent sexual harassment of working women (Aug. 14); Krishan Kant elected Vice-President of India (Aug. 17); Lt. General S.K. Sinha appointed Assam Governor (Aug. 21); Union Cabinet approves Foreign Exchange Management Act (FEMA) to replace FERA (The Act provides for gradual liberalisation in prevailing stipulations in foreign exchange transactions on capital account) (Aug. 26); In a first-ever address by any presiding officer in the history of Indian Parliament, Speaker Sangma gives a call for a "second freedom struggle" to rid the country of internal contradictions (Aug. 27); In a far-reaching decision, the Election Commission bars convicts from fighting polls (Aug. 29); Nobel laureate, 87-year-old Mother Teresa passes away in Calcutta (Sept. 5); Nag, an anti-tank missile, is test-fired at interim test range at Chandipur-on-Sea near Balasore. Nag has a range of four to six kms (Sept. 9); Prasar Bharati Act becomes effective.

making autonomy for Doordarshan and Akashvani a distinct possibility (Sept. 15); Mr. Kalyan Singh of Bharatiya Janata party takes over as Chief Minister of Uttar Pradesh (Sept. 21); Indian Space Research Organisation (ISRO) blasts off its Polar Satellite Launch Vehicle (PSLV-C1) from Sriharikota Range and puts a 1200-kg Remote Sensing Satellite, IRS-ID in an orbit 817 km above the earth (Sept. 29); Gerhard Fischer, a former German diplomat currently working in India with leprosy patients and polio-inflicted children, gets the Gandhi Peace Prize 1997 (Oct. 1); Indian Space Research Organisation (ISRO) abandons INSAT-2D after revival bid fails; India signs agreements on air services and tourism with Uganda (Oct. 5); Prime Minister, Mr. I.K. Gujral, begins his South African visit with a call to revive the NAM (Non-Aligned Movement) spirit (Oct. 6); India, South Africa decide to enhance defence cooperation, with the South African government offering a whole range of military hardware and equipment to meet India's requirements (Oct. 8); The 37-year-old Indian writer, Ms. Arundhati Roy, bags the 29th Booker Prize, so far the most prestigious literary award in Britain, for her first novel 'The God of Small Things' (Oct. 15); The Interpol unanimously passes a resolution in New Delhi urging the United Nations to adopt a universal extradition convention (Oct. 17); The first "strategic dialogue" between India and the United States concludes in Delhi. India rejects US proposal for UN seat on rotation basis (Oct. 18); Following the massive crash on major bourses across the world, New York, London, Hong Kong, and India stock markets witness a sharp fall in share prices as almost all the pivots lose heavily and close with a wide gap (Oct. 28); The government effects several changes in the Prasar Bharati Act of 1990 through an Ordinance (Oct. 31); The government appoints Mr. Bimal Jalan, Member-Secretary of the Planning Commission, as the new Governor of Reserve Bank of India; New airport policy allows 74 per cent foreign equity share (Nov. 7); Crucial excerpts of the Jain Commission's interim report, published in a weekly magazine, raps DMK and its chief Mr. M. Karunanidhi, former Prime Ministers Mr. V.P. Singh and Mr. Chandra Shekhar for ignoring Rajiv Gandhi's security needs (Oct. 8); The Supreme Court upholds a Kerala High Court judgement declaring "bandhs" organised by any political party or trade union as "unconstitutional and illegal" (Nov. 12); Chief of Naval Staff, Admiral

Vishnu Bhagwat commissions the indigenously designed and built multi-purpose destroyer *INS Delhi*. (Nov. 15); Kalpana Chawla becomes the first Indian woman to go into space (Nov. 19); The Jain Commission interim report and action taken report tabled in both Houses of Parliament (Nov. 20); The United Front (UF) Core Committee rejects the Congress demand for dropping of DMK ministers (Nov. 21); Miss India, Diana Hayden crowned Miss World 1997 in Mahe, Seychelles; The government constitutes the Prasar Bharati Board, with veteran journalist Mr. Nikhil Chakravarty as the chairman and former Information Secretary Mr. S.S. Gill, as the executive member (Nov. 23); India and UAE sign extradition agreement; Dalal Lama is presented the Paulos Gregorios Award for 1997 for his contribution to Interfaith dialogue (Oct. 25); Mr. A.P.J. Abdul Kalam, pioneer of India's missile programme, is awarded the country's highest civilian award, Bharat Ratna (Nov. 26); *Trishul*, India's most sophisticated short range surface-to-air missile is successfully test-fired (Nov. 27); Ms Divya Chauhan of India wins First runners-up title at the Miss Asia Pacific contest held at Davao in Philippines (Dec. 7); The National Pharmaceutical Pricing Authority reduces prices of 72 formulations (Dec. 11); The Election Commission announces fresh norms, saying that no new party would be registered after announcement of the poll schedule nor splits in parties will be recognised (Dec. 12); The National Human Rights Commission recommends a special task force to eradicate the inhuman practice of child and bonded labour in the carpet belt of Uttar Pradesh (Dec. 14); The Supreme Court, in its effort to minimise vehicular pollution, orders freezing of the registration of three-wheel scooter rickshaws in Delhi, unless an old TSR is replaced by a new one (Dec. 16); Ms. J. Jayalalitha opts for a tie-up with the Bharatiya Janta Party (Dec. 17); In a landmark judgement, the Supreme Court quashes order on need for prior sanction and frees the CBI from restraint in investigating cases of corruption in high places (Dec. 18); The Central Pollution Control Board Chairman, Prof. Dilip K. Biswas, is conferred the International Felicitation Award instituted by the World Environment Congress and its NGO affiliates (Dec. 23); The Press Council of India seeks a blanket ban on publication of exit-poll surveys in the event of staggered Lok Sabha polls (Dec. 28); Mrs. Sonia Gandhi agrees to campaign for the Congress Party in the forthcoming Lok Sabha elections; The

election expenditure limit for Lok Sabha candidates is raised to Rs. 15 Lakh (Dec. 29); Titan Industries is ranked No. 1 in two of the five categories of the English Weekly *Far Eastern Economic Review's* 'Review 2000 : Asia's Leading Companies' (Dec. 31).

1998 : Voluntary Disclosure of Income Scheme achieves "resounding success" mopping up Rs. 10,050 crore (Jan. 3); Konkan Railway's entire 760-km stretch between Chattrapati Shivaji Terminus in Mumbai and Madgaon in Goa become operational covering Maharashtra, Karnataka and Goa with the commissioning of Mangalore-Roha section (Jan. 26); Software exports from India grow a healthy 59 per cent in 1997 to \$ 1.6 billion over 1996 (Feb. 13); *INS Sindhurakshak*, the newly-bought Russian submarine of the Indian Navy, joins the 12th submarine squadron based at Mumbai (Mar. 5); Veteran Indian diplomat, Mr. Prakash Shah, appointed UN Secretary-General's special envoy to Iraq (Mar. 6); The first all-women crew of an Indian Airlines aircraft flies from Bombay to Karachi to mark the International Women's Day (Mar. 8); Atal Behari Vajpayee sworn in as India's 13th PM (Mar. 18); GMC Balayogi of TDP elected Speaker of 12th Lok Sabha (Mar. 24); In its 7th Report, the Disinvestment Commission proposes strategic sales in four PSU's (FACT, HLL, IPCL & NFL) offer of sale in one (NALCO) and deferment of decision in two (SAIL and NLC) (Mar. 26); Government opens up the economy further by scrapping import curbs on 340 items including consumer products and liberalises all major export promotion schemes (Apr. 13); The Centre issues an ordinance creating the Central Electricity Regulatory Commission (CERC) (Apr. 26); Kushabhau Thakre takes over as President of BJP; Government approves the next phase of the Intermediate Range Ballistic Missile (IRBM), *Agni* (May 3); India achieves a major breakthrough in nuclear build-up by conducting three underground nuclear tests at the Pokhran range in Rajasthan; India also successfully test-fires the short range, triple-role *Trishul* missile, with a capability of being used as surface-to-surface and surface-to-air missile, in Chandipur, Orissa (May 11); India conducts two more sub-kiloton nuclear tests at Pokhran (May 13); India successfully test-fires its multi-barrel rocket system *Pinaka* from the Interim Test Range (ITR) at Chandipur (May 20); Indore becomes the first city in the country to have its own private telephone service (June 3); India to launch Korean and German satellites marking its entry into the

world market for satellite launch services (June 14); 9th Plan reoriented on BJP's national agenda lines (July 6); Leander Paes becomes the first Indian to win an ATP tour title in eight years (July 12); India test-fires the 650-kg multi-target surface-to-air *Akash* missile (Aug. 3); Government announces a financial package for Information Technology (Aug. 7); Defence Minister states that the nuclear button will be in the hands of political leadership (Aug. 8); National Human Rights Commission recommends compulsory registration of all marriages in a bid to check child marriages (Aug. 17); Centre announces delicensing of the sugar industry (Aug. 20); Ordinance conferring statutory status on Central Vigilance Commission promulgated (Aug. 25); President gives assent to the ordinance on the Prasar Bharati Act (Aug. 29); *Nishant*, pilotless training aircraft developed by DRDO, successfully test-flown (Sept. 2); Ms. Falima Bi, first woman sarpanch in Andhra Pradesh, receives the United Nations Development Programme's Race Against Poverty Award on the occasion of the International Day for Eradication of Poverty (Oct. 16); In line with the recommendations of the Narasimham Committee Report, RBI announces sweeping banking reforms, issuing stricter provisioning norms for banks (Oct. 30); Union Government promulgates an Ordinance allowing companies to buy back their own shares up to 25 per cent of their paid-up capital and free reserves (Oct. 31); Government announces the Internet policy, permitting private Internet Service Providers (ISBs) to provide services which were earlier the exclusive monopoly of Videsh Sanchar Nigam Limited (VSNL) and the Department of Telecommunications (DoT) (Nov. 6); Planning Commission scales down the Ninth Five-Year Plan (1997-2002) growth target to 6.5 per cent from seven per cent due to poor performance of the economy (Nov. 10); Union Cabinet decides to allow 26% foreign equity in the Insurance sector (Nov. 23); Prof. Amartya Sen receives the 1998 Nobel Prize for Economics (Dec. 10); Patents (Amendment) Bill, 1998 approved by Rajya Sabha; Veteran Freedom Fighter and Socialist leader as also architect of Janita Party victory in post-emergency period, Jaya Prakash Narayan awarded Bharat Ratna posthumously (Dec. 23); India rules out any roll-back of its nuclear programme and asserts to maintain nuclear deterrent credibility and non-compromise on national security (Dec. 24).

1999 : See Part II : 1999 At A Glance.

12. Geography of India

PHYSICAL FEATURES

The Indian subcontinent occupies a strategic position in Southern Asia. It has a distinct geographic entity, separated from the rest of Asia by the lofty mountain barriers of the Himalayas, the Kirthars, the Sulaiman, the Hindukush and the Poorvanchal ranges. The countries comprising the Indian subcontinent are India, Pakistan, Nepal, Bhutan and Bangladesh, India being the largest among all these.

The territories of India's mainland extend for 3,214 kilometres between the extremes of north and south, and 2,933 kilometres in the east-west extreme points. India has three distinct physical divisions. The northern boundaries of India are provided by the lofty ranges of the Himalayas, which run almost in a wall like shape from north-west to north-east. Then we have the Great Plains of Northern India formed by the basins of three mighty river systems, viz., the Indus, the Ganga and the Brahmaputra. Down below we have the Deccan Plateau of the Peninsular India, which is geologically the oldest. It consists of huge rock blocks of very ancient times.

The Great Mountain Wall of the North: India's northern frontiers are distinctly marked out by an arc shaped huge mountain wall comprising the snow capped mountain ranges of the Karakoram and the Himalayas. The Karakoram mountain range rises from the Pamir Knot in the north-west stretches towards south-east up to the Indus valley in Jammu and Kashmir. The world's second highest mountain peak K2 (Godwin Austen), which has a height of 8,610 metres, belongs to this chain of mountains. Famous Baltoro Glacier also lies in the high valleys of Karakoram ranges. To the south of the Karakoram mountains is the Ladakh range and further below southwards is the Zaskar range of mountains, both of which lie in Jammu and Kashmir.

The Himalayas, which form almost a 2,500-kilometre long continuous mountain wall on India's north, extending from Indus in the west to Brahmaputra in the east, can be divided into western, central and eastern Himalayas. The western Himalayas encompass Jammu and Kashmir and Himachal Pradesh. The central Himalayas are spread over northern Uttar Pradesh and Nepal. The eastern Himalayas cover northern parts of the West Bengal and extend into Sikkim, Bhutan and Arunachal Pradesh.

The Himalayas broadly consist of three parallel ranges of mountains, viz., the Himadri, the Himachal and the Siwaliks. The Himadri or the Greater Himalayas comprise the northernmost range and lie on the edge of the Tibetan Plateau. It is the highest mountain range with an average height of about 6,000 metres above the sea level. The world's highest mountain peak, Mount Everest (8,848 metres) in Nepal, belongs to the Greater Himalayas. Kanchenjunga (8,597 metres), Nanga Parbat (8,125 metres) and Nanda Devi (7,816 metres) are the highest peaks of the Greater Himalayas in India.

South of the Himadri lies the Himachal range, which is also known as the Middle or the Lesser Himalayas, which has a height varying between 3,700 and 4,500 metres above sea level. This range of alternating ridges and valleys and highly dissected uplands contains many of India's important hill stations. The beautiful Kashmir, Kulu and Kangra valleys of India and Kathmandu valley in Nepal, lie in this mountain range. The popular hill stations of Shimla, Mussoorie, Nainital and Darjeeling are also located on the Himachal ranges of the Himalayas.

The Siwalik range is the southernmost range of Himalayas which is the lowest among the Himalayan ranges with a height of between 900 to 1,200 metres above the sea level. Made up of mud and soft rocks, it is a discontinuous range which lies on the northern border of the Ganga plain and extends towards east to merge with the main mountains.

Though the Himalayas, with their loftiest mountain ranges, form the impeccable barrier on India's northern frontiers, they do contain some gaps in their ranges which provide natural routes across these high mountains. These gaps, called 'passes', have not only been traditional trade routes over the past many centuries, but have also provided easy access to the foreign invaders and greatly influenced the course of India's history. The important passes in the Himalayas are the Khyber, the Bolan, Shipki la, Nathu la, Bomdi la.

On India's north-eastern side are located the Poorvanchal mountains, which consist of the Patkai Bum and the Naga Hills in the north, Mizo and Lushai Hills in the south and the Garo, Khasi and Jaintia Hills which lie in the centre. These

mountain ranges are neither as tall nor as spectacular as the mighty Himalayas.

The Great Plains of Northern India: India, which has the world's highest and the most spectacular mountains, is also fortunate in possessing one of the world's most extensive and fertile plains, made up of alluvial soil brought down in the form of fine silt by the mighty rivers. These Great Northern Plains consist of the Indus basin, the Ganga-Brahmaputra basin and the tributaries of these mighty river systems. The bulk of the Indus basin falls within Pakistan but a part of it is shared by Punjab and Haryana. The Ganga-Brahmaputra basin is larger of the two and covers a large number of States in northern India.

The most characteristic feature of the Great Plains of northern India is the extreme horizontality or levelness. There is practically no difference in geomorphological features of the two parts, viz., the Indus basin and the Ganga-Brahmaputra basin—except the water divide which separates these two basins. This divide is made by a low narrow ridge of Aravalli range passing through Delhi and Ambala. The average height of the water divide is not more than 300 metres above the sea level, and this gives the plain a touch of continuity between these two drainage basins of the Indus and Ganga. However, according to the terrain characteristics, this plain can be divided into two parts: (i) the upland plain which lies above the flood level and is made up of old alluvium. This plain is called the Bangar Land, and (ii) the lowland plain, which is liable to inundation during floods and thus acquires fresh doses of new alluvium. This is also called the Khadar Land.

The Drainage of the Great Plains: The Indus and the Ganga-Brahmaputra river systems together form the Great Plains of northern India. River Indus is a trans-Himalayan river. It originates beyond Himalayas in Tibet and flows throughout in Pakistan. Among its tributaries, Jhelum and Chenab also flow through Pakistan, while Ravi makes a small run through India before entering into Pakistan. Only Sutlej, another trans-Himalayan river and a tributary of Indus, flows for its major course through India, while Beas, a tributary of Sutlej, remains in India throughout its journey in the plains. Thus, only a small portion of the Indus river basin, comprising Punjab and Haryana, lies in the northern plains of India.

The Ganga-Brahmaputra river system forms the largest part of the Great Plains of north India. It covers almost one-fourth of the total land area of the country. Ganga rises from the Gangotri glacier in the Himalayas and is joined by the

Yamuna and Sone rivers on its right bank. Rivers joining Ganga on its left side are Gomti, Ghaghra, Gandak and Kosi. The Yamuna rises from the Jamnotri glacier in the Himalayas, but its important tributaries, viz., Chambal, Betwa and Ken rise from the Malwa Plateau.

Beyond Farakka, the main stream of the Ganga flows into Bangladesh and is known as river Padma. Some eighty kilometres above, before falling into the Bay of Bengal, Padma is joined by the mighty Brahmaputra, a trans-Himalayan river which rises from the Mansarovar Lake in Tibet. And together they form the world's largest and perhaps the most fertile delta in Indo-Bangladesh region. The other stream of Ganga, bifurcated at Farakka, runs southwards into West Bengal and is called river Hooghly. It splits up into a number of channels before falling into the Bay of Bengal beyond Calcutta.

The Great Plains of the north, being extremely fertile and most suited to agriculture, make them the granary of India. Apart from the food crops of rice, wheat and millets, this region also provides cash crops like sugarcane, oilseeds, jute, etc. This region has a dense population on its large number of towns and villages and also accounts for a number of industries.

The Great Plateau of Peninsular India: To the south of the Great Plains of northern India lies the old landmass of the Peninsular India which is made up of hard metamorphic rocks. This part of land adjoining northern plains, is known as the Great Plateau of Peninsular India. This Great Plateau has two distinct parts, viz., the Malwa Plateau and the Deccan Plateau.

The Malwa Plateau which comprises the northern region of the Great Plateau of Peninsular India is bounded by the Aravalli hills in the north-west and the Vindhya in the south, both these low old mountains forming the sharp edges of this plateau. The third side of this triangular Malwa Plateau, which extends from west to east, slopes gradually towards the plain of Ganga and merges into it. The valley of the river Narmada forms the southern boundary of the Malwa Plateau, while its extensions to the east form the Bundelkhand and Baghelkhand in southern Uttar Pradesh and Chota Nagpur in southern Bihar. Most of the rivers of this plateau flow northward into river Yamuna. The Malwa Plateau, particularly its north-eastern part called Chota Nagpur plateau, is the richest mineral producing region of India.

The Deccan Plateau, which is roughly of a triangular shape, extends from the Satpura hills in the north to Kanyakumari, the southern most

tip of India ending in the Indian Ocean. On the western edge of the Plateau lie the Sahyadri, the Nilgiri, the Annamalai and the Cardamom Hills, commonly known as the Western Ghats. The average height of the Western Ghats, which run along the Arabian Sea, goes on increasing towards the south. Anaimudi peak in Kerala, with a height of 2,695 metres above the sea level, is the highest peak of the Peninsular India. In the Nilgiris lies the Ootacamund, the most well-known hill station of southern India.

From the Western Ghats, the Deccan Plateau gradually slopes away towards east to the Bay of Bengal. The eastern edge of the Deccan Plateau is less marked as the Eastern Ghats have discontinuous low hills called Mahendra Giri. All the major rivers of the Deccan Plateau, viz., Mahanadi, Godavari, Krishna and Cauvery, flow from west to east and piercing through these low discontinuous ranges of the Eastern Ghat hill merge into the Bay of Bengal. Only Narmada and Tapi are the two major rivers which flow from east to west and fall in the Arabian Sea.

The north-western part of the Great Plateau is made up of lava flows or the igneous rocks called Basalt, also known as Deccan Trap. These several hundred metres thick rocks are spread over the whole of Maharashtra and parts of Gujarat and Madhya Pradesh giving a thick dark soil in these regions. This soil called Regur or Black soil is especially suited to cotton cultivation and makes this region the most important cotton growing belt in India. Many parts of the Great Plateau are rich in minerals and the famous gold fields of Kolar, uranium deposits of Tamil Nadu and Bihar, the manganese, iron ore and copper deposits of the north-east lie in the regions comprising this Great Plateau.

The Great Desert of Rajasthan: To the north-west of the Malwa Plateau lies the Thar Desert or the Great Desert of Rajasthan. The desert, which is made up of sand, interrupted by rocky hills and waterless valleys, begins from the west of the Aravalli ranges and extends deep into Pakistan. The desert is the region of inland drainage system, as the few rivers that flow in this area either drain into the salt lakes or disappear into the sands. Only the river Luni drains off into the Rann of Kutch. The desert climate being arid and unfavourable for human settlement, makes the area sparsely populated.

The Coastal Strips: The Deccan Plateau is flanked, on its west and east, by narrow coastal plains along the Arabian Sea and the Bay of Bengal. The Western Coastal Plain lies between

the Western Ghats and the Arabian Sea. The southern part of the Western Coastal Plain, called the Malabar Coast, is narrow, uneven and gradually dissected by a number of fast flowing streams and rivers. It has a number of lagoons, backwaters and raised beaches. The northern part of the Western Coastal Plains, called the Konkan Coast gets wider as it moves further northwards and encompasses plains of Gujarat.

The eastern coastal plain, lying between the Eastern Ghats and the Bay of Bengal, is wider and more levelled. It contains some of the most fertile and well-watered deltas formed by Krishna, Cauvery, Godavari and Mahanadi rivers. The southern part of the Eastern Coastal Plain is known as Coromandel Coast and its northern part is known as the Northern Circars. The soils of eastern coast are deep and fertile.

Indian Islands: Besides the mainland, India has two groups of islands, viz., the Andaman and Nicobar islands in the Bay of Bengal and the Lakshadweep islands in the Arabian Sea. The Andaman and Nicobar Islands are a group of islands many of which are too small and uninhabited. The northern cluster of islands is called the Andamans, a group of 204 small islands, and the southern cluster is known as the Nicobar islands, a group of 19 islands. Together they form the Union Territory of the Andaman and Nicobar Islands, with Port Blair as the capital.

The Lakshadweep comprise a group of 27 coral islands scattered in the Arabian Sea, about 300 kilometres to the west of Kerala coast. None of these horse-shoe or ring shaped islands is more than a couple of kilometres length and breadthwise, and of the 27, about 17 islands are uninhabited. The Kavaratti Island is the capital of the Union Territory of Lakshadweep.

CLIMATIC CONTRASTS

India, with its vast size and marked variations in terrain, is a land of climatic contrasts. On an extremely hot summer afternoon, the temperature may occasionally shoot up to 55 degrees centigrade in certain parts of Rajasthan and south-west Punjab. And on a severe winter night, the mercury may dip to as low as minus 45 degree centigrade in a cold arid region of Kargil. Similarly, Cherapunji, with its annual rainfall of 1,080 centimetres, is known to be the wettest place in the world while the dry regions of west Rajasthan receive no more than 13 centimetres of annual rainfall. In between these two extremes, there are regions of equable, moderate and uniform climate. These variations in temperature and rainfall make

India the land of diverse climate and weather conditions.

Apart from its own size and relief features, some of the phenomena influencing India's weather and climatic conditions lie much beyond its geographical limits. The western disturbances affecting winter weather in northern India originate from the low pressure systems developing in the eastern Mediterranean region. Temperature and pressure conditions in East Africa, Iran, Central Asia and Tibet affect the behaviour of monsoons. The weather conditions in the rest of the Indian subcontinent, the Indian Ocean and the China Sea also affect the weather conditions in various parts of India. The upper air currents or jet streams too have their influence on the country's climatic and weather conditions.

The most important factor in shaping India's climatic conditions is monsoons that affect almost all parts of the country with varying intensity and duration and account for seasonal rhythm. An important characteristic feature of the monsoons is the complete reversal of winds which leads to the alternation of season. On the basis of monsoon variations, the year is divided into four seasons. These are:

- | | |
|---|------------------------|
| (i) The cold weather season | — December to February |
| (ii) The hot weather season | — March to May |
| (iii) The south-west monsoon season or the rainy season | — June to September |
| (iv) The season of retreating south-west monsoon | — October to November |

The Cold Weather Season: Starting in December, the cold weather season becomes fully established in January and the temperature distribution over India shows a marked decline as one moves from south to north. Generally, the days are bright and sunny but the nights are cold. This generally fine weather is, however, occasionally disturbed by the western disturbances which bring light rainfall and severe cold waves.

The Hot Weather Season: The period between March and May is that of rising temperatures and decreasing air pressures as the belt of intense heat shifts from south to north. Dry hot wind blows over most of the northern region and dust storms of great velocity strike Punjab, Haryana and Uttar Pradesh which are afterwards followed by light showers and cool breeze.

By the end of May, low pressure trough is developed which occasionally attracts the moisture-

laden winds, which coming into contact with the hot dryland winds, cause pre-monsoon rains. Kerala and coastal plains of the west receive a fair share of pre-monsoon showers, commonly known as 'mango showers'. Assam and Bengal also receive rain during this season, but north-west India remains comparatively dry.

The South-West Monsoon Seasons: By early June, the low pressure area over north-western plains becomes highly intense to attract the south-west rain bearing winds, which approach suddenly with thunder and lightning. Within almost one month's time, these winds overrun almost the entire country.

The south-west monsoons originate from the Indian ocean and blow over the land mass of India from June to September. Due to the intense summer heat, a low pressure area is formed over the northern plains of India. But the oceanic region has a low temperature and a high pressure centre. Consequently, air starts moving from the high pressure area of the Indian Ocean towards the low pressure area over the land mass of India in the form of rain bearing monsoon winds. The south-east trade winds, which originate south of Equator, are also sucked into the wind system of the northern Indian Ocean and are deflected towards India. The landmass of peninsular India divides these south-west monsoons into two branches, viz., the Arabian Sea branch and the Bay of Bengal branch.

The monsoon winds arising from the Arabian Sea, strike the Western Ghats and cause heavy rains. Having crossed the Ghats, they advance over the Deccan Plateau and Madhya Pradesh and are joined by a current of winds arising from the Bay of Bengal. Another part of the Arabian Sea monsoon winds cross the coast of Saurashtra and Kutch and passing over Aravalli hills, reach Punjab and Haryana. These winds also join the winds from the Bay of Bengal and cause widespread heavy rains in western Himalayas. The monsoon winds from the southern Bay of Bengal mainly move towards Burma, but a part of these winds is deflected by the Arakan Hills and move westward, over the Ganga-Brahmaputra valley. They strike the north-eastern hills and cause heavy rainfall in West Bengal, its adjoining States, sub-Himalayan region and the northern plains.

In all parts of the country, with the exception of the east coast of Tamil Nadu, bulk of annual rainfall is received during the monsoon season. But the distribution of rainfall is highly unequal as the monsoon winds become weak as they

traverse over longer distances. The windward side of the Western Ghats receives heavy rainfall while the leeward side gets much smaller amount. The intensity and frequency of the cyclonic depressions originating in the Bay of Bengal and their crossing over to the mainland as well as the passage followed by them account for the variations in geographical distribution of rainfall.

The Retreating South-West Monsoon Season:

The monsoon winds start retreating from Punjab and Haryana by mid-September, Ganga delta by late October and the Peninsular India by early November, leaving the land moist and the atmosphere humid. However, from the middle of October, temperature begins to decline in northern parts of India. The weather during this season is characterised by high day temperature, clear sky and pleasant nights. The fall in temperature continues and the winter season becomes firmly established by December.

During this transition period of October-November, the low pressure conditions disappear from the north-western India and are transferred to the centre of the Bay of Bengal. These cyclonic depressions in the Bay of Bengal often cross the Southern Peninsula and cause widespread heavy rains along the coastal regions of Tamil Nadu, making October-November as the rainiest months in this part of the country.

North-East Monsoons: The north-east monsoons are the winds blowing out from the landmass of north-western India toward the Indian Ocean during the period of December and February. The low pressure area formed in the Ocean region attracts these winds from the high pressure areas formed during chilly winters over the north-western parts of India. These cold and dry winds move down the Ganga valley towards the Indian Ocean. The winds that move through the Bay of Bengal become moisture laden and strike the Tamil Nadu coast to bring winter rains in that region.

LAND RESOURCES AND MAJOR CROPS

Agriculture is the backbone of India's economy, it provides livelihood to about 69 per cent of the country's working force, contributes nearly 33 per cent of national income and accounts for about 25 per cent share in India's exports. It forms the basis of many premier industries of India including cotton textile, jute and sugar industries. Being the largest source of employment and income to the millions of people, it provides a vast market for our industrial products. It is because of the

paramount significance of agriculture in India's economy that this sector has been, and continues to be, accorded a pride of place in India's plans for economic development.

Land Resources: India has a geographical area of about 329 m hectares but statistical information is available only for about 93 per cent of the area (viz., for 305 m hectares). About half of the area (46.9 per cent) is under cultivation.

Forests cover about 22.7 per cent of land area for which data is available. Another 30.3 per cent of area is not available for cultivation because it either comprises fallow lands, residential or commercial areas or is otherwise not fit for cultivation. Consequently, cultivation is done only on about 47 per cent of the total reporting area in the country.

Soil Types: Soil quality is an important factor in crop-yield. The soil provides nourishment and water to the plant life. It consists of minerals, organic matter, water, air, etc., all of which determine its characteristics, fertility, depth, texture and structure and, thus, govern the type and quality of plants and crops that can be grown in any region of the country. India, with its vast land surface and diverse relief features, possesses a large variety of soils, which, according to the National Council of Agricultural Research, are classified into the following eight categories.

(i) **Alluvial Soil:** Alluvial soil covers almost a quarter of India's land surface and provides the base for the largest share of country's agricultural production. This type of soil is composed of sediments deposited by the mighty rivers in the interior parts of India and by the sea wave in the coastal areas of the country. The Great Plains of India running from Punjab to Assam possess rich alluvial soil. It is also found in Narmada and Tapi valleys in Madhya Pradesh and Gujarat, Mahanadi valley in Madhya Pradesh and Orissa, Godavari Valley in Andhra Pradesh and Cauvery Valley in Tamil Nadu. It also occurs in the deltas of Mahanadi, Godavari, Krishna and Cauvery rivers. Alluvial soils are generally deficient in nitrogen and humus and thus necessitate repeated fertilisation. Such soils are suitable for growing all types of cereals, pulses, sugarcane, vegetables, oilseeds, etc.

(ii) **Black Soil:** Black soil is found largely in the Deccan Plateau. It is eminently suitable for cotton cultivation and is, therefore, also called black cotton soil. In some areas, it is known as 'regur'. The black colour of the soil is attributed to the presence of compound of iron and aluminium. This soil is generally deficient in nitrogen,

phosphates, and organic matter but is quite rich in potash, lime, aluminium, calcium and magnesium. The black soil exists in many areas of Madhya Pradesh, Maharashtra, Gujarat, Karnataka, Andhra Pradesh and Tamil Nadu. Cotton, cereals, some oilseeds and a variety of vegetables are grown in areas of black soil.

(iii) Red Soil: The red soil occurs mostly in the southern peninsula and extends up to Jhansi in the north, Kutch in the west and Rajmahal Hills in the east. This soil is made up of crystalline and metamorphic rocks and is rich in ferromanganese minerals and soluble salts but is deficient in nitrogen and humus and thus needs fertilisation. It has a light texture and a porous structure. Red soil is most suited to the growth of rice, ragi, tobacco and vegetables.

(iv) Lateritic Soil: This type of soil is found in areas of high rainfall and temperature with alternate dry and wet periods. The soil contains high content of iron oxides. It is deficient in nitrogen, phosphorus, potash and magnesium. Such soil is found in the high reaches of Sahyadris, Eastern Ghats, Rajmahal Hills and the hilly tracts of the eastern region. It is also found in parts of Karnataka, Andhra Pradesh, Kerala, Orissa and West Bengal. This type of soil is suitable for rice, ragi and sugarcane cultivation.

(v) Forest Soils: Forest soil is rich in organic matter and humus. It is found in the Himalayas and other mountain regions of the north, higher summits of the Sahyadris, Eastern Ghats, Karnataka, Tamil Nadu, Kerala, Manipur, Jammu and Kashmir and Himachal Pradesh. Crops like tea, coffee, spices and tropical fruits are grown on this type of soil.

(vi) Arid and Desert Soils: The arid and semi-arid regions of north-west India have this type of soil which is generally deficient in nitrogen and humus. It is largely found in the areas west of Aravalli Ranges and covers Rajasthan, parts of Haryana and Punjab and extends up to the Rann of Kutch. Generally desert soil is infertile but its fertility improves with proper irrigation and fertilisation.

(vii) Saline and Alkaline Soils: Saline and alkaline soils are found in the arid and semi-arid parts of Rajasthan, Punjab, Haryana, Uttar Pradesh and Bihar. These soils, variously called 'reh', 'usar' or 'kallar' are largely infertile. However, they can be improved through proper treatment and reclamation measures.

(viii) Peaty and Other Organic Soils: Peaty soils contain large accumulations of humus, organic matter and soluble salts. These soils are

highly saline and are deficient in phosphorus and potash. Marshy soils occur in regions of Orissa, West Bengal and Tamil Nadu. They are also found in central and north Bihar and in Almora district of Uttar Pradesh.

Crop Seasons: There are two major crop seasons in India, viz., Kharif and Rabi. The Kharif crops are associated with the monsoons. They are sown in the months of June and July and are harvested in autumn months, viz., in September and October. Important among the Kharif crops are rice, jowar, bajra, ragi, maize, cotton and jute.

The Rabi crops are sown in the period between October and December and harvested in April and May. Important among the Rabi crops are wheat, barley, peas, Rabi pulses, linseed, rapeseed and mustard.

However, this distinction between Kharif and Rabi crops does not hold good in the case of some crops such as sugarcane, which is a long duration crop spanning over 10 to 18 months. Similarly, the short duration vegetable crops also do not fall under these distinct categories.

Again, areas, which are extensively irrigated, grow three to four crops per year and, thus, fall out of the purview of the distinction between the Kharif and Rabi crops. Similarly, in southern half of the Peninsular India where temperatures are sufficiently high and rainfall is extensive in winter months, rice, jowar, coffee, etc., are sown, thus again blurring this categorisation under Kharif and Rabi crops. However, for most of India, Kharif and Rabi remain the distinct crop seasons with the specific variety of crops grown therein.

Major Crops: Agricultural crops can be broadly divided into two categories, viz., food crops and non-food crops. Foodgrains consist of cereals and pulses. Among the cereals are included rice, wheat, jowar, bajra, maize, etc. Pulses include gram, moong, masur, arhar, etc. The non-food crops comprise a number of cash crops such as sugarcane, cotton, jute, tobacco, etc. Tea, coffee, rubber are included among the plantation crops. Besides these, we have the horticulture crops like fruit, vegetables, coconut, cashew, etc.

Some of the crops raised in India as well as the States producing largest quantity of these crops are given below :-

- Bajra** : (1) Gujarat (2) Rajasthan
- Barley** : (1) Uttar Pradesh (2) Rajasthan
- Cardamom** : (1) Karnataka (2) Kerala
- Castor seed** : (1) Gujarat (2) Andhra Pradesh
- Chillies (dry)** : (1) Tamil Nadu (2) Andhra Pradesh
- Coffee** : (1) Karnataka (2) Kerala
- Coriander** : (1) Rajasthan (2) Andhra Pradesh

Cotton : (1) Gujarat (2) Maharashtra
Ginger (dry) : (1) Kerala (2) Himachal Pradesh
Gram : (1) Rajasthan (2) Uttar Pradesh
Groundnut : (1) Gujarat (2) Tamil Nadu
Guar seed : (1) Rajasthan (2) Haryana
Jowar : (1) Maharashtra (2) Karnataka
Jute : (1) West Bengal (2) Bihar
Linseed : (1) Madhya Pradesh (2) Uttar Pradesh
Maize : (1) Uttar Pradesh (2) Bihar
Mesta : (1) Andhra Pradesh (2) Orissa
Millets (small) : (1) Madhya Pradesh (2) Andhra Pradesh
Niger seed : (1) Orissa (2) Uttar Pradesh
Paddy : (1) West Bengal (2) Tamil Nadu
Pulses (Kharif) : (1) Rajasthan (2) Maharashtra
Pulses (Rabi) : (1) Orissa (2) Madhya Pradesh
Ragi : (1) Karnataka (2) Tamil Nadu
Rape-seed and Mustard : (1) Uttar Pradesh (2) Rajasthan
Rice : (1) West Bengal (2) Tamil Nadu
Safflower : (1) Maharashtra (2) Karnataka
Sannhemp : (1) Uttar Pradesh (2) Madhya Pradesh
Sesamum : (1) Uttar Pradesh (2) Rajasthan
Sugarcane : (1) Uttar Pradesh (2) Maharashtra
Tapioca : (1) Kerala (2) Tamil Nadu
Tea : (1) Assam (2) Kerala
Tobacco : (1) Maharashtra (2) Tamil Nadu
Tur : (1) Uttar Pradesh (2) Madhya Pradesh
Wheat : (1) Uttar Pradesh (2) Punjab

IRRIGATION

India, by virtue of its peculiar placement in the foothills of the Himalayas and having the ranges of the Satpura, Aravalli and the Deccan Plateau running through it, has vast water resources which have been very meagerly tapped. Conventional and recognised means of Irrigation are tanks, wells and canals.

Wells: Well irrigation is an important type of irrigation in India. Wells are particularly suitable for small farms. The important well-irrigated States are Uttar Pradesh, Punjab, Tamil Nadu and Maharashtra. In these States water-table is high, soil is soft and, therefore, wells easily sunk.

Tubewells are an important development in India. They are worked by electricity or diesel oil and thus they relieve our cattle of much of the strain. They are being quickly developed in Uttar Pradesh, Bihar and Punjab. This is because these have ample sub-soil water.

Wells and tubewells account for about 48 per cent of the total irrigation in India.

Tanks: Tanks are also an important and ancient source of irrigation. They are of considerable importance in central and southern India, specially

in Andhra Pradesh and Tamil Nadu. About 8 per cent of the total irrigated area is irrigated by tanks.

Canals: Canals are the most important means of irrigation in the country. Some canals were constructed by the early Hindu and Mohammedan kings. Most of the canals, however, are the product of the British rule. At present, canals irrigate about 38 per cent of total irrigated area of India. Most of the canals of the country are found in Uttar Pradesh and Punjab. Storage canals have been constructed in Deccan and Madhya Pradesh.

Major, Medium and Minor Irrigation Projects
 The methods of irrigation used in India can be broadly classified into major, medium and minor irrigation schemes. Irrigation projects having Culturable Command Area (CCA) of more than 10,000 hectares each are classified as major projects. Those having a CCA between 2,000 hectares and 10,000 hectares fall under the category of medium irrigation projects. And the projects which have a CCA of less than 2,000 hectares are classified as minor irrigation schemes. For the purpose of analysis the major and the medium irrigation projects are generally grouped together. These projects comprise a network of dams, bunds, canals and other such schemes. Such projects require substantial financial outlay and are, therefore, constructed by the government or any other agency which may draw financial assistance from the government and financial institutions.

The minor irrigation projects, on the other hand, comprise all ground water development schemes such as dug wells, private shallow tubewells, deep public tubewells, boring and deepening of dugwells, and small surface water development works such as storage tanks, lift irrigation projects, etc. Minor irrigation projects or the groundwater development schemes are essentially people's programmes implemented primarily through individual and co-operative efforts with finances obtained mainly through institutional sources.

IRRIGATION DEVELOPMENT

Before 1951, the total irrigated area in India was only 22.6 million hectares of which 9.7 million hectares was irrigated through major and medium irrigation projects and 12.9 million hectares through minor irrigation schemes. By the end of 1992-93, the irrigation potential increased to 83.4 million hectares, of which 31.3 million hectares was under the major and medium projects and 52.1 million hectares under minor schemes.

SOME MAJOR IRRIGATION AND MULTIPURPOSE PROJECTS

Bargi Project (Madhya Pradesh): It is a multipurpose project consisting of a masonry dam across Bargi river in the Jabalpur district and a left bank canal.

Beas (Joint venture of Haryana, Punjab and Rajasthan): It consists of Beas-Sutlej Link and Beas Dam at Pong.

Bhadra (Karnataka): A multipurpose project across the river Bhadra.

Bhakra Nangal (Joint project of Haryana, Punjab and Rajasthan): India's biggest, multipurpose river valley project comprises a straight gravity dam across the Sutlej at Bhakra, the Nangal dam, the Nangal Hydel channel, two power houses at Bhakra Dam and two power stations at Ganguwal and Kotla.

Bhima (Maharashtra): Comprises two dams, one on the Pawana river near Phagne in Pune district and the other across the Krishna river near Ujjaini in Sholapur district.

Chambal (Joint project of Madhya Pradesh and Rajasthan): The project comprises Gandhi Sagar dam, Rana Pratap Sagar dam and Jawahar Sagar dam.

Damodar Valley Project (West Bengal and Bihar): A multipurpose project for the unified development of irrigation, flood control and power generation in West Bengal and Bihar. It comprises multipurpose dams at Konar, Tilaiya, Maithon and Panchet; hydel power stations at Tilaiya, Konar, Maithon and Panchet; barrage at Durgapur; and thermal power houses at Bokaro, Chandrapura and Durgapur. The project is administered by the Damodar Valley Corporation.

Dulhasti Power Project: It is a 390 MW power project in Kishtwar region of Jammu & Kashmir on Chenab river. Work for this project started in 1981. The foundation stone was laid on April 15, 1983 by the late Prime Minister, Mrs. Indira Gandhi. Work on this project was suspended due to threats of kidnapping and killings by Kashmiri militants and remained suspended till August 1992.

Farakka (West Bengal): The project was taken up for the preservation and maintenance of Calcutta port and for improving the navigability of the Hooghly. It comprises a barrage across the Ganga at Farakka, a barrage at Jangipur across the Bhagirathi and a feeder channel taking off from the Ganga at Farakka and tailing into the Bhagirathi below the Jangipur barrage.

Gandak (Joint project of Bihar and Uttar Pradesh): Nepal also derives irrigation and power benefits from this project.

Ghataprabha (Karnataka): A project across Ghataprabha in Belgaum and Bijapur districts.

Hasdeo Bango Project (Madhya Pradesh): It is the third phase of Hasdeo Bango project complex and envisages construction of a masonry dam across Hasdeo river. The first and second phases have been substantially completed.

Hirakud (Orissa): World's longest dam, is located on the Mahanadi river.

Jayakwadi (Maharashtra): A masonry spillway across the river Godavari.

Kahalgaoon Project: The 840-MW Kahalgaoon Super Thermal Power Project, a joint venture between National Thermal Power Corporation and the Russian State Enterprise Foreign Economic Association, was on August 12, 1996 commissioned and put into commercial operation.

Kakrapara (Gujarat): On the Tapi river near Kakrapara, in Surat district.

Kangsabati (West Bengal): The project envisages construction of dams on the Kangsabati and Kumari rivers.

Karjan (Gujarat): A masonry dam across Karjan river near Jitgarh village in Nandoo Taluka of Bharuch district.

Kosi (Bihar): A multipurpose project, which serves Bihar and Nepal.

Krishna Project (Maharashtra): Dhom dam near Dhom village on Krishna and Kanhar dam near Kanhar village on Varna river in Satna district.

Kukadi Project (Maharashtra): Five independent storage dams, i.e., Yodgaon, Manikdohi, Dimbha, Wadaj and Pimpalgaon Jog. The canal system comprises (i) Kukadi left bank canal, (ii) Dimbha left bank canal, (iii) Dimbha right bank canal, (iv) Meena feeder and (v) Meena branch.

Left Bank Ghagra Canal (Uttar Pradesh): A link channel taking off from the left bank of Ghagra river of Girja barrage and joining with Sarju river. Also a barrage across Sarju.

Madhya Ganga Canal (Uttar Pradesh): A barrage across Ganga in Bijnor district.

Mahanadi Delta Scheme (Orissa): The irrigation scheme will utilise releases from the Hirakud reservoir.

Mahanadi Reservoir Project (Madhya Pradesh): It has three phases: (1) Ravishankar Sagar Project and feeder canal system for supply of water to Bhitai Steel Plant and Sandur dam across Sandur Village. (2) Extension of Mahanadi feeder canal. (3) Pairi dam

Mahl (Gujarat): A two-phase project, one across the Mahl river near Wanakbori village and the other across Mahl river near Kadana.

Malaprabha (Karnataka): A dam across the Malaprabha in Belgaum district.

Mayurakshi (West Bengal): An irrigation and hydro-electric project comprises the Canada dam.

Nagarjunasagar (Andhra Pradesh): On the Krishna river near Nandikona village (about 44 km from Hyderabad).

Panam (Gujarat): A gravity masonry dam across Panam river near Keloszar village in Panchmahals district.

Parambikulam Aliyar (Joint venture of Tamil Nadu and Kerala): The integrated harnessing of eight rivers, six in the Annamalai Hills and two in the plains.

Pochampad (Andhra Pradesh): Across Godavari river.

Pong Dam (Punjab): It is an important hydro-electric project located on Beas river.

Rajasthan Canal (Rajasthan): The project uses water released from Pong dam and provides irrigation facilities to the north-western region of Rajasthan, i.e., a part of the Thar desert. It consists of Rajasthan feeder canal (with the first 157 km in Punjab and Haryana and the remaining 37 km in Rajasthan) and 445 km Rajasthan main canal entirely in Rajasthan.

Ramganga (Uttar Pradesh): A dam across Ramganga, a tributary of the Ganga river located in Garhwal district. The project has, besides reducing the intensity of floods in central and western Uttar Pradesh, provided water for the Delhi water supply scheme.

Ranji Sagar Dam (Thein Dam) (Punjab): A multi-purpose highest dam in the country, being built on the Ravi river to benefit Punjab, Haryana and Jammu and Kashmir.

Sabarmati (Gujarat): A storage dam across Sabarmati river near Dhan village in Mahsana district and Wasna barrage near Ahmedabad.

Salal Project: With the successful completion of the 25-km long barrage tunnel, the 880-MW Salal (Stage I and II) project in Jammu and Kashmir became fully operational on August 5, 1995.

Sarda Sarayak (Uttar Pradesh): A barrage across the river Ghagra, a link channel, a barrage across river Sarda and a feeder channel of two major aqueducts over Gomti and Sai.

Sone High Level Canal (Bihar): An extension on Sone barrage project.

Tawa (Madhya Pradesh): A project across the Tawa river, a tributary of the Narmada in Hoshangabad district.

Teri Dam (Uttar Pradesh): Earth and rock-fill dam on Bagmati river in Teri district.

Tungabhadra (Joint Project of Andhra Pradesh and Karnataka): On the Tungabhadra river.

Ural (Gujarat): A multipurpose project across Tapti river near Ural village.

Upper Krishna (Karnataka): A project consisting of Narayanpur dam across the Krishna river and a dam at Almatti.

Upper Penganga (Maharashtra): Two reservoirs on Penganga river at Isapur in Yavatmal district and the other on Rayadnu river at Sapli in Parbhani district.

Uri Power Project: It is located on the river Jhelum in the Uri Tehsil of Baramulla district in Jammu & Kashmir. It is a 490 MW hydroelectric project which was dedicated to the nation on February 13, 1997.

VEGETATION AND FORESTS

Among the most valuable natural resources of India must be reckoned her magnificent forests. The area under forests in India is about 571.5 lakh hectares, which accounts for about 22.1 per cent of the total geographical area of the country.

Types of Forests

India possesses a variety of forests and natural vegetation which varies from region to region due to variations in climatic conditions, soil types and relief features. The country can be divided into five major vegetation regions which are: (i) the tropical evergreen and semi-evergreen forests, (ii) the tropical deciduous forests, (iii) the dry thorn forests, (iv) the tidal forests and (v) the hill forests of the Himalayan region.

Tropical Evergreen Forests: These forests thrive in regions of very high rainfall, usually over 300 centimetres per year, in a climate of high humidity and even temperatures. The vegetation is very thick and the trees are lofty, reaching a height of 50 metres or even more. Most of such forests are found on the windward side of the Western Ghats on altitudes ranging from 500 to 1,500 metres, and in the hill regions of the north-eastern part of India.

Semi-evergreen Forests: These lie on the relatively dry sides of the evergreen forests in Western Ghats, West Bengal, Orissa and other north-eastern region of India. These forests are generally confined to areas receiving about 200 centimetres of rainfall per year. The trees in these forests are lofty and hardwooded, vegetation is dense and undergrowth is very thick. Bamboo, ebony and rubber trees are the economically important vegetations of this region, but difficulties of exploitation make them of little commercial use.

Tropical Deciduous Forests: These forests, also known as monsoon forests, are found in the regions that get about 100 to 200 centimetres of rainfall per annum. They extend from the Shivalik ranges in the north to the eastern flanks of the

Western Ghats in the peninsular India. The trees in these forests shed leaves for about 6 to 8 weeks in summer, but since each specie has its own shedding time, the forests, on the whole, never look absolutely bare of greenery in any part of the year. Teak, sal, sandalwood, shisham and mahua trees that grow in abundance in these forests are economically very valuable.

Thorn Forests: The thorn forests are the vegetation of the comparatively dry and arid regions which have annual rainfall of less than 80 centimetres. This type of vegetation is common in western Punjab, south-west Haryana, Rajasthan, parts of Gujarat and Madhya Pradesh and the drier parts of the Deccan. The relatively wet areas of these forests have widely scattered growth of wild dates and kikar and babul trees which have long roots and sharp thorns. Bushes, scrubs and cacti grow in the very dry areas and the desert regions.

Tidal Forests: These forests have grown along the deltas of rivers which are subjected to tides, important among them being the forests of the Mahanadi and Ganga deltas. The mangrove forests of Sundarbans in the Ganga delta are the haunts of the famous Bengal Tiger and the forest region itself has been named after the Sundari trees that grow there. These forests yield firewood and tanning material.

Forests of the Himalayan Region: In the Himalayan region, the forests and the type of vegetation differ with the differences in altitude. The outermost Himalayas or the Siwaliks are covered with the tropical moist deciduous forests vegetation of teak, sal and rose wood trees. At the higher elevations are found the evergreen forests of oak, chestnut, beech, ash and elm. At still higher altitudes ranging from 1,600 to 3,300 metres, are found the coniferous forests of pine, cedar, silver fir and spruce. And at altitudes beyond 3,500 metres are found grasses and shrubs called the Alpine vegetation, which farther onward give place to the naked snowcapped mountain ranges.

SOCIAL FORESTRY

The concept of social forestry, which has now been recognised and accepted by the Government and is being implemented on a massive scale, aims at not only providing adequate quantities of fuelwood, fodder and other forest produce, but also meet the requirements of ecological balance through large-scale afforestation on community lands and waste lands in the country. The farm forestry, which has been largely practised in the country so far, aims at growing of trees on private

lands, on the farm boundaries and private plantations. The social forestry programme, on the other hand, mainly comprises of three schemes, viz., (i) mixed plantation on waste lands, (ii) reafforestation of degraded forests, and (iii) raising of shelter belts. Thus, social forestry involves creating potentials of forest raw material resources on degraded forest areas, waste lands panchayat lands and on the sides of roads, canals and railway lines. Under the social forestry schemes, fuel wood plantations are grown for quickly raising the supply of fuel wood and fodder.

WILDLIFE

In spite of the high density of population and the consequent onslaughts of human habitation to the remotest corners of India, the country can still boast of a large variety of wildlife comprising over 350 species of animals, 12,000 species of birds and 30,000 species of insects, fishes and reptiles. Much of the wildlife in India is peculiar to this sub-continent and not found anywhere else in the world. The swamp deer is only found in India. The four-horned antelope (*chausingha*), the Kashmir stag and the nilgai exist only in India and Pakistan. The spotted chital, perhaps the most beautiful of all deer, has its home only in India. The black-buck is found nowhere else except in India and Pakistan. The great Indian one-horned rhinoceros is unique to India and Nepal. The Indian lion, which is the only lion to be found outside Africa, is a native of India and not imported from Africa. The Indian 'bison' is not a bison at all; it is gaur which is a specie of wild ox peculiar to India.

National Parks and Wildlife Sanctuaries: The concept of wildlife as a 'thing of beauty' and a 'gift of nature' which need to be preserved, rather than a 'game' to be hunted, grew largely with the birth of independent India in 1947, when many of the former game reserves were redesignated as 'Wildlife Sanctuaries', where all the wild animals and birds were sought to be fully protected so that they will not become extinct. Project Tiger was also launched with the object of preserving and increasing tiger population by safeguarding the tiger, animals of its prey and its habitat in selected areas of the country. The Wildlife (Protection) Act, 1972 governs the conservation and protection of endangered species both inside and outside the forest areas.

Presently, the country has 67 national parks, 394 wildlife sanctuaries, and 17 Tiger Reserves where through the efforts of the Central and the

State Governments and by cooperation of the voluntary agencies, wildlife is sought to be carefully protected and preserved. No wonder that these wildlife parks, reserves and sanctuaries have now become places of interest for the tourists from the world over.

Project Tiger: The Centrally sponsored scheme 'Project Tiger' was initiated on April 1, 1973 with the objectives of:

(a) ensuring the maintenance of a viable population of tigers in India for scientific, economic, aesthetic, cultural and ecological values; and

(b) preserving for all times, areas of such biological importance as a national heritage for the benefit, education and enjoyment of people.

To achieve these objectives, 17 tiger reserves have so far been established in 12 States. The success of the scheme can be judged from the fact that the tiger population of India, which was fast declining and had reached only 268 in 1972, had multiplied to 1,121 in 1984.

The Project Tiger has helped in increasing the tiger population by providing a protected habitat to this majestic animal. According to information laid in the Lok Sabha on July 28, 1994, the tiger population in the country totalled 3750 with Madhya Pradesh topping the list with 912 tigers, followed by Uttar Pradesh (465) and West Bengal 365. Further strong steps are needed to protect tiger from widespread poaching as tiger bones and skins have a lucrative market in certain countries (particularly in China) that make tiger hunting a highly profitable business.

Meanwhile, the Government has approved (June 1, 1999) continued implementation of Project Tiger during Ninth Plan at an estimated cost of Rs. 75 crore. The six new tiger reserves planned include 3 in Madhya Pradesh, one each in Arunachal Pradesh, Karnataka and Maharashtra.

NATIONAL PARKS AND WILDLIFE SANCTUARIES

Bandhavgarh National Park, Shahdol (Madhya Pradesh)

Bandipur National Park, Mysore (Karnataka)

Bannarghatta National Park, Bangalore (Karnataka)

Borivli National Park, Mumbai (Maharashtra)

Chandraprabha Sanctuary, Varanasi (Uttar Pradesh)

Corbett National Park, Nainital (Uttar Pradesh)

Dachigam Sanctuary, Srinagar (Jammu & Kashmir)

Dudwa National Park, Lakhimpur Kheri (Uttar Pradesh)

Eravikulam Rajmally National Park, Idukki (Kerala)

Ghana Bird Sanctuary, Bharatpur (Rajasthan)

Ghaiprabha Bird Sanctuary, Belgaum (Karnataka)

Gir National Park, Junagarh (Gujarat)

Guindy National Park, Madras (Tamil Nadu)

Hazaribagh National Park, Hazaribagh (Bihar)

Jaldapara Sanctuary, Jalpaiguri (West Bengal)

Kanha National Park, Mandla (Madhya Pradesh)

Kaziranga National Park, Jorhat (Assam)

Khangchendzenda National Park, Gangtok (Sikkim)

Kutree Game Sanctuary, Bastar (Madhya Pradesh)

Manas Tiger Sanctuary, Barpeta (Assam)

Melapattu Bird Sanctuary, Nellore (Andhra Pradesh)

Mudumalai Sanctuary, Nilgiris (Tamil Nadu)

Nagerhole National Park, Coorg (Karnataka)

Nal Sarovar Bird Sanctuary, Ahmedabad (Gujarat)

Nawagaon National Park, Bhandara (Maharashtra)

Palamau Tiger Sanctuary, Daltonganj (Bihar)

Pench National Park, Nagpur (Maharashtra)

Periyar Sanctuary, Idukki (Kerala)

Ranganthitoo Bird Sanctuary, Mysore (Karnataka)

Ranthambor Tiger Sanctuary, Sawai Madhopur (Rajasthan)

Rohia National Park, Kulu (Himachal Pradesh)

Shivpur National Park, Shivpuri (Madhya Pradesh)

Simlipal Tiger Sanctuary, Mayurbhanj (Orissa)

Sultanpur Lake Bird Sanctuary, Gurgaon (Haryana)

Sunderbans Tiger Sanctuary, 24 Parganas (West Bengal)

Todoba National Park, Chandrapur (Maharashtra)

Valavadar National Park, Bhavnagar (Gujarat).

MINERAL WEALTH OF INDIA

India is fairly rich in mineral resources. It possesses large reserves of iron ore, extensive deposits of coal, sizeable quantity of mineral oil reserves, rich deposits of bauxite and has a virtual monopoly of mica, all of which hold the potentials of making India economically self-reliant modern industrial nation. No doubt, the country is still deficient in some minerals like petroleum, tin, lead, zinc, nickel, etc., but the continued exploration of India's underground mineral wealth is yielding promising results, thus adding

the known and potential deposits of various minerals.

The mineral resources of India are, however, unevenly distributed. The Great Plains of northern India are almost entirely devoid of any own deposits of economic minerals. On the other hand, south Bihar and Orissa areas on the north-eastern parts of peninsular India possess a high concentration of mineral deposits, accounting for nearly three-fourths of the country's coal deposits and containing highly rich deposits of iron ore, manganese, mica, bauxite and radioactive materials. Mineral deposits are also scattered over the rest of the peninsular India and in parts of Assam and Rajasthan.

Names of some important minerals and the states where they are largely found are given below :-

Metallurgical Minerals

Antimony : (1) Punjab (2) Karnataka
Bauxite : (1) Bihar (2) Madhya Pradesh
Chromite : (1) Orissa (2) Maharashtra
Coal : (1) Bihar (2) West Bengal
Copper : (1) Bihar (2) Rajasthan
Diaspore : (1) Uttar Pradesh (2) Madhya Pradesh
Gold : (1) Karnataka (2) Andhra Pradesh
Iron : (1) Goa (2) Madhya Pradesh (3) Bihar (4) Orissa
Lead : (1) Rajasthan (2) Andhra Pradesh
Lignite : (1) Tamil Nadu (2) Gujarat
Manganese : (1) Orissa (2) Madhya Pradesh
Nickel : (1) Orissa
Natural gas : (1) Assam (2) Gujarat

Petroleum : (1) Assam (2) Gujarat
Silver : (1) Rajasthan (2) Bihar (3) Karnataka
Tin : (1) Bihar
Tungsten : (1) Rajasthan (2) West Bengal
Uranium : (1) Kerala (2) Bihar (3) Rajasthan
Zinc : (1) Rajasthan

Non-Metallurgical Minerals

Asbestos : (1) Andhra Pradesh (2) Bihar
Ball clay : (1) Andhra Pradesh (2) Rajasthan
Barytes : (1) Andhra Pradesh (2) Maharashtra
Calcite : (1) Rajasthan (2) Gujarat
China clay (Kaolin) : (1) Rajasthan (2) West Bengal
Corundum : (1) Karnataka (2) Maharashtra
Diamond : (1) Madhya Pradesh
Dolomite : (1) Madhya Pradesh (2) Orissa
Felspar : (1) Rajasthan (2) Tamil Nadu
Fire clay : (1) Bihar (2) Gujarat
Fluorite : (1) Gujarat (2) Rajasthan
Graphite : (1) Orissa (2) Rajasthan
Gypsum : (1) Rajasthan (2) Andhra Pradesh
Kyanite : (1) Bihar (2) Maharashtra
Limestone : (1) Madhya Pradesh (2) Tamil Nadu
Magnetite : (1) Tamil Nadu (2) Uttar Pradesh
Marble : (1) Rajasthan
Mica : (1) Bihar (2) Rajasthan
Ochre : (1) Rajasthan (2) Madhya Pradesh
Pyrites : (1) Bihar
Sulphur : (1) Tamil Nadu
Quartz : (1) Andhra Pradesh (2) Karnataka
Quartzite : (1) Orissa (2) Bihar
Silica Sand : (1) Uttar Pradesh (2) Gujarat
Sillimanite : (1) Maharashtra (2) Meghalaya

13. Constitution of India

MAKING THE CONSTITUTION INTRODUCTION

In accordance with the recommendation of the Constituent Mission which visited India in March 1946, the Constituent Assembly of India was elected by provincial assemblies in July 1946. It had 389 members in all, including 93 representatives of princely States.

The Constituent Assembly was not a sovereign body as its members were indirectly elected by those who were themselves elected on a narrow franchise.

In any case it contained some of the most eminent Indian personalities of the time, among whom were Jawaharlal Nehru, Rajendra Prasad,

Vallabhbhai Patel, Abul Kalam Azad, G. B. Pant, B. G. Kher, K. M. Munshi, Purshottam Das Tandon, T. T. Krishnamachari, H. N. Kunzru, M. R. Masani, J. B. Kripalani, B. R. Ambedkar, S. Radhakrishnan, Liaquat Ali Khan, Khwaja Nazimuddin, Feroz Khan Noon, H. S. Suhrawardy, Mohammed Zafarulla Khan and so on.

However, M. K. Gandhi and M. A. Jinnah were not members of the Constituent Assembly.

The Muslim League members refused to take part in the deliberations of the Assembly, although they had joined the Interim Government. The first session of the Assembly was held in New Delhi on December 9, 1946. It was attended by 207 members including four Muslims elected on Congress ticket.

Jhichidanand Sinha was elected temporary chairman of the session. However, on December 11, 1946, Rajendra Prasad was elected as the Permanent Chairman of the Constituent Assembly.

The objectives of the Constituent Assembly were stated in Nehru's resolution proposed on December 13, 1946, and passed on January 22, 1948. These were:

India was to be an independent sovereign republic in which both British India and the princely States were to be included. Each unit was to be given a certain amount of autonomy as well as residuary powers. All authority and power of the State was to be derived from the people who were to be guaranteed freedom of economic and political justice, equality of status and opportunity before law. They were to be guaranteed freedom of thought, vocation, association, expression, belief, faith, worship and action subject to law and morality. The minorities and backward and tribal people were to be provided adequate safeguards.

Between December 9, 1946 and August 14, 1947, five sessions of the Constituent Assembly were held. In accordance with Indian Independence Act of 1947, the Constituent Assembly became a sovereign body. It was no longer to confine itself to the limitations laid down by the Cabinet Mission.

It appointed Lord Louis Mountbatten as first Governor-General and Jawaharlal Nehru as the Prime Minister of India.

FUNDAMENTAL RIGHTS

The Constitution of India embodies an impressive list of Fundamental Rights and thus offers to all citizens individually and collectively those basic freedoms and conditions of life which alone can make life significant and democracy fruitful. Such rights are considered to be essential for the proper, moral and material upliftment of people. These rights are an integral part of the Constitution and hence cannot be altered or taken away by ordinary legislation. These rights are fundamental in the sense that any law passed by any legislature in the country would be declared as null and void if it is derogatory to the rights guaranteed by the Constitution. If any of these rights is violated the individual affected is entitled to move the Supreme Court or High Court for the protection and enforcement of his rights. However, during operation of emergency, the President may suspend all the fundamental rights and may also suspend the right of the people to move the High Courts and Supreme Court for the enforcement of these rights. Any such order may extend to the whole or any part of India.

The Fundamental Rights have been classified under the following main heads:

(1) **Right to Equality:** It guarantees to all persons (citizens as well as others) equality before the law and equal protection of law. It prohibits discrimination between citizens on ground only of religion, race, caste, sex, place of birth, or any of them. All citizens have equal access to shops, public entertainments and places of public resort, which are maintained wholly or partly by the State. However, special provisions may be made in respect of women, children, socially and educationally backward classes, and scheduled castes and tribes. The Constitution guarantees equal opportunities relating to public employment to all citizens, but some posts may be reserved for backward classes. It abolishes untouchability and also abolishes the system of conferring titles by the State, except military and academic distinctions.

(2) **Right to Freedom:** Article 19 of the Constitution guarantees freedoms under this right. These are:

- (i) freedom of speech and expression;
- (ii) freedom to assemble peaceably and without arms;
- (iii) freedom to form association or unions;
- (iv) freedom of movement throughout India;
- (v) freedom to reside and settle in any part of the territory of India; and
- (vi) freedom to practise any profession or to carry on any occupation, trade or business.

These freedoms are subject to reasonable restrictions that may be imposed by the State in the interests of the sovereignty and integrity of India, security of the State, friendly relations with foreign States, public order, decency or morality or any other restrictions in the interests of the general public.

(3) **Right to Freedom of Religion:** All citizens have been guaranteed freedom to profess, practice and propagate any religion. Every religious group has been given the freedom to manage its religious affairs and to own, acquire and administer property for religious or charitable purposes.

(4) **Right against Exploitation:** The right seeks to ban traffic in human beings, *begar* or any other form of forced labour. Employment of children below 14 years of age in any factory or mine or other risky occupations is also prohibited by law.

(5) **Cultural and Educational Rights:** This right guarantees to the minorities the right of conserving their language, script and culture, to receive education and administer educational institutions of their choice.

(6) **Right to Constitutional Remedies:** It guarantees the right to move the Supreme Court for the enforcement of fundamental rights. This right can, however, be suspended during the operation of a proclamation of emergency by the President.

The **Right to Property**, contained in Part III—**Fundamental Rights**—of the Constitution, has been repealed by the Constitution (Forty-fourth Amendment) Act, 1978 with effect from June 20, 1979.

FUNDAMENTAL DUTIES

For the first time, ten Fundamental Duties have been enumerated in the Constitution with the 42nd Amendment Act. These have been provided in Part (IV) A, Section 51, and are as under:

(i) To abide by the Constitution and respect its ideals and institutions, the National Flag and National Anthem.

(ii) To cherish and follow the noble ideas which inspired our national struggle for freedom.

(iii) To uphold and protect the sovereignty, unity and integrity of India.

(iv) To defend the country and render national service when called upon to do so.

(v) To promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities, to renounce practices derogatory to the dignity of women.

(vi) To value and preserve the rich heritage of our composite culture.

(vii) To protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.

(viii) To develop the scientific temper, humanism and the spirit of inquiry and reform.

(ix) To safeguard public property and to abjure violence.

(x) To strive towards excellence in all spheres of individual and collective activity, so that the nation constantly rises to higher levels of endeavour and achievement.

DIRECTIVE PRINCIPLES OF STATE POLICY

The Directive Principles of State Policy constitute the fourth part of the Constitution and are unique and novel in so far as they depict the ambitions and aspirations of the fathers of the Constitution. It was laid down that these provisions are not enforceable in any court but they are

fundamental in the governance of the country and it was the duty of the State to apply these principles in making laws.

The Directive Principles have not been properly classified in the Constitution, yet they can be conveniently divided into following categories:

Economic Principles: (i) Equal distribution of wealth and material resources among all classes of people so as to prevent its concentration in a few hands.

(ii) Provision of adequate means of livelihood to all citizens of the States.

(iii) Equal pay for equal similar work for both men and women.

(iv) To ensure just and human conditions of work, a decent standard of living, full enjoyment of leisure and social and cultural opportunities.

(v) Maintenance and protection of health and strength of all citizens.

(vi) To make provision for public assistance in case of unemployment, old age, sickness, disability and other cases of undeserved want.

(vii) To raise the level of nutrition and standard of living.

The enumeration of the above mentioned economic principles are comparable to fundamental rights guaranteed by the Constitution of erstwhile U.S.S.R. The principles are indicative of the desire of the framers of the Constitution to introduce socialism in the country. The State has been directed to take steps within the limits of its economic resources, to secure right to work or employment, right to education, right to material security in old age, sickness and disability.

Gandhian Principles: (i) Prohibition of intoxicating drinks and drugs.

(ii) To establish Village Panchayats.

(iii) Free and compulsory education for children up to the age of fourteen.

(iv) The state shall promote with special care the educational and economic interests of the weaker sections of the people and particularly scheduled castes and scheduled tribes and shall protect them from social injustice and all forms of exploitation.

(v) Prohibition of the slaughter of cows and calves and other milch and draught cattle and to promote animal husbandry for improving their breed.

(vi) To set up and promote cottage industries.

Principles for the promotion of International Understanding: (i) To promote international peace and security.

(ii) To maintain just and honourable relations between nations.

(iii) To foster respect for international law and treaty obligations in dealings of organised peoples with one another.

(iv) To encourage settlement of international disputes by arbitration.

Miscellaneous: (i) To separate judiciary from the executive.

(ii) To protect monuments and historical buildings.

(iii) The State shall endeavour to secure for the citizens uniform civil code throughout the territory of India.

IMPORTANT ARTICLES OF THE CONSTITUTION

Part I comprises Articles 1-4 and deals with the territory of India, admission or establishment of new states, formation of new states and alteration of areas, boundaries or names of existing states.

Part II comprising Articles 5-11 deals with citizenship at the commencement of the Constitution, 'rights of citizenship of certain persons who migrated to India from Pakistan', rights of citizenship of certain migrants to Pakistan, rights of citizenship of persons of Indian origin residing outside India, persons voluntarily acquiring citizenship of a foreign state, continuance of rights of citizenship and the right of Parliament to regulate the rights of citizenship by law.

Part III covers Articles 12-35 and deals with the Fundamental Rights of Indian citizens. Articles 14-18 deals with the right to equality. Article 19 deals with six freedoms of Indian citizens namely, (a) freedom of speech and expression; (b) freedom of assembly; (c) freedom of association; (d) freedom of movement throughout the territory of India; (e) freedom of residence and settlement in any part of India; and (f) freedom of occupation. Articles 20-22 spell out protection to all persons in respect of conviction, prosecution and rights available to them in this regard. Articles 23-24 deal with the right against exploitation and prohibit traffic in human beings, forced labour, employment of children below 14 years in factories, mines and other hazardous jobs. Article 25-28 deal with the right to religion. Articles 29-30 deal with cultural and educational rights and afford protection to the interests of minorities. Article 31 dealing with the right to property was deleted by the Forty-fourth Amendment. Articles 32-35 provide the right to constitutional remedies to citizens.

Part IV covering Articles 36-51 deals with the Directive Principles of State Policy which aim at

establishing social and economic democracy in the country.

Part IV-A contains only Article 51A, which was added by the Forty-second Amendment in 1976. It outlines the duties of the citizens of India.

Part V (52-151) deals with the government at the Union level. Articles 52-73 deal with the President and the Vice-President of India. Articles 74-75 deal with the Council of Ministers and the Prime Minister of India. Article 76 relates to the Attorney General of India. Article 77 stipulates that all executive orders of the Government of India shall be taken in the name of the President. Article 78 specifies the duties of the Indian Prime Minister with respect to the furnishing of information to President etc. Articles 79-106 relate to the Indian Parliament and deal with the organisation of the Lok Sabha and the Rajya Sabha; the delimitation of territorial constituencies; qualification for membership of Parliament; power of the President to summon, prorogue and address either house of Parliament; disqualification of members; powers, privileges and immunities of Parliament and its members, salaries and allowances of members and so on. Articles 107-122 deal with the legislative procedure in Parliament. Article 123 deals with the legislative powers of the President. Articles 124-147 deal with the Union judiciary. Articles 148-151 deal with the Comptroller and Auditor General of India.

Part VI (152-237) deals with the government at the state level. Article 152 exempts Jammu & Kashmir from the category of ordinary states. Articles 153-162 deal with the state Governor. Articles 163-164 deal with the Chief Minister and his council of ministers. Article 165 deals with the Advocate General for the state. Article 166 relates to the conduct of business of the government of a state. Article 167 relates to the duties of Chief Minister with respect to furnishing of information to the Governor. Articles 168-195 deal with the organisation of state legislatures and so on. Articles 196-212 deal with legislative procedure in the states. Article 213 deals with the legislative powers of the Governor. Articles 214-232 deal with the organisation and powers of high courts in the states. Article 233-237 deal with the subordinate courts.

Part VII comprising Article 238, which dealt with states in Part B of the First Schedule was repealed in 1956 by the Seventh Amendment.

Part VIII (239-241) deals with Union territories. Articles 239-241 contain provisions regarding the administration of Union territories. Article 340 relating to Coorg was repealed by the Seventh Amendment in 1956.

Part IX relating to territories in Part D of the First Schedule and other territories was repealed in 1956. A new Part IX was added to the Constitution by the Seventy-third Amendment Act of 1992. It comprises of 16 Articles and a new Schedule 'Schedule Eleven'. These articles provide for the constitution, composition, election, duration, powers and responsibilities and power to levy taxes and duties by the Panchayati Raj institutions in the rural areas. Schedule Eleven contains 29 subjects on which the Panchayats have administrative control.

A new part IX-A to the Constitution was added by the Seventy Fourth Amendment Act, 1992. It consists of 18 Articles and a new Schedule 'Schedule Twelve'. These articles provide for the constitution, composition, election, and duration of municipalities, and powers and responsibilities of municipalities in respect of preparation of plans for economic development, levy tax and other duties. Schedule Twelve contains 18 subjects on which the municipalities exercise administrative control.

Part X deals with the scheduled and tribal area, and contains Articles 244 and 244A.

Part XI deals with relations between the union and the states. Articles 245-255 deal with the legislative relations. Articles 256-263 deal with administrative relations.

Part XII deals with finance, property, contracts and suits (264-267). Articles 268-300 deal with the distribution of revenue between the union and states, appointment of Finance Commission, miscellaneous financial provisions, borrowing by Government of India and states property, contracts, etc. rights, liabilities, and obligation suits.

Part XIII (301-307) relates to trade, commerce and intercourse within the territory of India.

Part XIV relates to services under the union and states and contains Articles 308 to 314. Articles 315-323 relate to the Union Public Service Commission and Public Service Commissions in states.

Part XIV A inserted by the 42nd Amendment in 1976 contains only Articles 323A and 323B which deal with administrative tribunals which may be set up by the Parliament to hear disputes and complaints regarding Union, state or local government employees as well as for other matters.

Part XV deals with elections. Article 324 relates to the Election Commission. Articles 325-329 refer to other matters relating to elections.

Part XVI (330-342) concerns special provision relating to certain classes such as reservation of seats for Scheduled Castes and Scheduled Tribes

in Lok Sabha and state assemblies; representation of Anglo-Indian community in Lok Sabha and Legislative Assemblies; claims of Scheduled Castes and Scheduled Tribes to services and posts; special provision regarding educational grants; appointment of commission to investigate conditions of backward classes, etc.

Part XVII (343-351) relates to official language.

Part XVIII deals with emergency provisions. Article 352 contains provisions regarding emergency due to external aggression or armed rebellion. Article 353 deals with the effects of the above proclamation of emergency. Article 354 relates to changes that can be effected in the distribution of revenues between the central and state governments. Article 355 asserts the duty of Union to protect states against external aggression and internal disturbances and ensure that government is carried on in accordance with the provisions of the Constitution. Article 356 deals with President's rule in the state. Article 357 authorises Parliament to confer on the President the power to make laws on state subjects and authorises the President to permit expenditure from the consolidated fund of the state. Article 358 provides for automatic suspension of Article 19 (regarding right to freedom) when emergency under Article 352 is in operation. Article 359 authorises the President to suspend the right to constitutional remedies. Article 360 relates to financial emergency.

Part XIX contains miscellaneous provisions, regarding exemption of the President and Governors from criminal proceedings for their official acts; immunity from court proceedings for publication of the report of proceedings of the Parliament and state legislatures and so on. This part contains Article 361-367.

Part XX deals with the amendment of the Constitution. Article 368 deals with the powers of the Parliament to amend the Constitution.

Part XXI contains temporary, transitional and special provisions. Article 369 accords temporary powers to the Parliament to make laws with respect to certain matters in the State List as if they were matters in the Concurrent List. Article 370 contains temporary provisions relating to Jammu & Kashmir. It restricts the power of Parliament to make laws for the state only with regard to matters listed in the Instrument of Accession and such other matters in the Union List and the Concurrent List which the President may specify with the concurrence of the government of that state.

Articles 371A, 371B, 371C, 371D, 371E, 371F, 371G, 371H and 371I relate to special provisions

for Maharashtra, Nagaland, Assam, Manipur, Andhra Pradesh, Sikkim, Mizoram, Arunachal Pradesh and Goa. Article 372 deals with the continuance in force of the existing laws and their adaptation. Articles 372-392 deal with several other miscellaneous matters. A number of these articles have since been repealed.

Part XXII concerns the short title, commencement and repeal of the Constitution. It contains Articles 393-395.

PRESIDENT

The President is the constitutional head of the Republic of India. He is more or less the titular head of the executive, real power being vested in the hands of the Council of Ministers. The Government is run in the name of the President though he cannot run the Government except in accordance with the advice of the Cabinet. The 42nd Amendment to the Constitution has made it obligatory on the part of the President to accept the advice of the Council of Ministers.

Qualifications and conditions for election as President: To be eligible for election as President, a person—

- (i) must be a citizen of India;
- (ii) must have completed the age of 35 years;
- (iii) must be qualified for election as a member of the Lok Sabha;
- (iv) must not hold any office of profit under the Government of India or the Government of any State or under any local authority subject to the control of any of these Governments.

The President of India is elected indirectly by an electoral college consisting of elected members of both houses of Parliament and elected members of the Legislative Assemblies of States in accordance with the system of proportional representation by means of single transferable vote. The voting at such election is by secret ballot. The votes of electorate are so regulated that the total voting strength of Parliament is equal to the total voting strength of all State Assemblies together and all States are uniformly represented at this election.

Powers of President: The President of India has to perform the following functions:

Executive Powers: The President is the supreme executive head of the state. He holds the supreme command of India's defence forces and has the power of declaring war and peace. All important appointments are made by the President. He appoints Governors of States, Ambassadors and other diplomatic representatives, Chief Justice and Judges of the Supreme Court

and High Courts, Attorney-General, the Chairman and members of the Union Public Service Commission and members of various commissions like the Election Commission, the Finance Commission. He also makes the appointment of the Prime Minister and on his advice other ministers of the Union Government. The administration of Union Territories is run by Lieutenant-Governors or Chief Commissioners on behalf of the President who appoints them.

Legislative Powers: The President of India is an integral part of the Parliament. He summons and prorogues either house of Parliament, calls joint sittings of the two houses, when necessary, and dissolves the Lok Sabha. He assents to or vetoes bills passed by the houses of Parliament and reserved bills from States and issues ordinances. Certain types of bills like the money bills cannot be introduced in Parliament without the previous sanction or recommendation of the President. He can promulgate ordinances at any time when the Parliament is not in session but such ordinances must be ratified by the Parliament when it reassembles.

Judicial Powers: He may grant pardon, reprieve, respite or remission of punishment or may suspend, remit or commute the sentence of any person convicted of any offence (a) where the punishment or sentence is by a court-martial; (b) where the punishment or sentence is for an offence against any law relating to a matter in which the executive power of the Union extends; and (c) in case where the sentence is a sentence of death.

Financial Powers: He causes the annual budget and important reports to be laid before the Parliament and recommends the introduction of money bills in the Parliament. He appoints the Finance Commission for allocation of share of proceeds of taxes between the Union and the States. He can also make advance from the Contingency Fund of India to meet unforeseen expenses pending approval of Parliament.

Martial Powers: He is the supreme commander of the defence forces of India.

Emergency Powers: Though the President is not very powerful as far as his normal powers are concerned, in cases of emergency he enjoys enormous powers. The Constitution provides for three kinds of emergencies, proclamations for which have to be issued by the President as and when necessary. The satisfaction of the President in issuing proclamation for emergency is not justiciable.

There are three types of emergencies: (i) war, external aggression or armed rebellion threatening

the security of the country; (ii) failure of constitutional machinery in the States; and (iii) financial emergency. The President is the sole judge to decide the first type of emergency but it has to be approved by the Parliament before the expiry of two months after the proclamation. The second type of emergency is declared after the Governor of a State reports to the President the failure of constitutional machinery in the State. It results in the suspension of the autonomy of the State concerned bringing it entirely under the President's rule. The President assumes to himself all or any of the functions of the Government of the State and declares that the powers of the legislature of the State shall be exercisable by or under the authority of the Parliament. The third type of emergency can be declared when the President is satisfied that the financial situation of the country demands it. When it is in operation the money bills have to be presented to the President for his assent, and he can exercise control over the finances of the Centre and the States and can even cut down the salaries of public servants.

Term of Office and Emoluments: The President holds office for a period of five years. He is eligible for re-election. He draws a salary of Rs. 50,000 per month besides various other allowances. He is also entitled to rent free official residence. His emoluments are a charge on the Consolidated Fund of India and are, therefore, not votable by the Parliament. His salary and allowances cannot be reduced during his term of office. He may himself decide to draw less than the salary fixed.

Procedure for the removal of President: The President may be removed from office for violation of the Constitution before the expiry of his term by impeachment. Charges for this purpose may be preferred by either house of the Parliament by a two-third majority. The other house investigates the charges. If it is finally established by two-third majority of the total membership of the other house as well, the President is forthwith removed from his office. He has the option to resign voluntarily before the expiry of his full term. In case of resignation, the President is supposed to write in his own hand a letter addressed to the Vice-President of India indicating his desire to resign. The Vice-President shall have to communicate forthwith such a decision of the President to the Speaker of the Lok Sabha. In case of a vacancy caused by his death, resignation or removal, the Vice-President is to officiate as President till the office is filled by new election of the President which must take place before the

expiry of a period of six months after the occurrence of the vacancy. The new holder of office is to hold the office for the full term of five years.

VICE-PRESIDENT

The Vice-President is provided with a comparatively insignificant role by the Indian Constitution. He is, however, much less of "His Superfluous Highness"—an epithet used sometimes to describe his American counterpart. But a clause in the American Constitution makes the Vice-President potentially significant. In the event of death, resignation or removal of the American President, the Vice-President assumes the office of President and continues in that capacity for the full length of the unexpired term. But under the Indian Constitution, if the President discontinues to be in office for any reason, the Vice-President will act as President only for a maximum period of six months.

Qualifications and conditions for election as Vice-President : To be eligible for election as Vice-President, a person—

- (i) must be a citizen of India;
- (ii) must have completed the age of 35 years;
- (iii) must be qualified for election as a member of the Rajya Sabha;
- (iv) must not hold any office of profit under the Union Government or a State or any local authority subject to the control of any of these Governments.

Such a person should not be a member of either house of Parliament or of any State legislature. If such a member is elected Vice-President, he has to resign his membership. The Constitution also lays down that such a person should not be an insolvent and must not be of unsound mind.

The Vice-President of India is elected by an indirect election, by an electoral college which consists of the members of the Lok Sabha and the Rajya Sabha. He is elected by single transferable vote and by secret ballot.

Functions: The Vice-President performs the following functions:

- (1) He is the ex-officio Chairman of the Rajya Sabha. In case he acts as President of India and discharges the functions of the presidency, he shall not preside over the sessions of Rajya Sabha.
- (2) He officiates as President in case of death, resignation or removal of the latter till the new President is elected. This period can be extended for a maximum period of six months.
- (3) When the President is unable to discharge his functions owing to absence, illness or any

other cause, the Vice-President shall discharge his functions. During such period, he shall be entitled to all the powers and immunities of the President. He shall be entitled to such emoluments, allowances and privileges as may be fixed by the Parliament by law.

Term of Office and Emoluments: The term of office of the Vice-President is five years. During this period, a Vice-President may resign voluntarily or he may be removed from office by a resolution passed by an absolute majority of the Rajya Sabha and agreed to by the simple majority of the Lok Sabha. But no resolution will be moved for this purpose without a notice of 14 days. No procedure for impeachment is necessary for the removal of the Vice-President. The election of the Vice-President must be held as soon as possible after the vacancy has arisen. He shall hold office for the full term of five years.

The Constitution does not fix any emoluments for the Vice-President of India in his official capacity as such. He is entitled to a salary of Rs. 40,000 in his capacity of being the Chairman of the Rajya Sabha. When he acts as President, he is entitled to get the emoluments equivalent to that of the President.

PRIME MINISTER

The Prime Minister of India is appointed by the President. But it is expected of the President to appoint only that person as Prime Minister who is leader of the majority party in the Lok Sabha. This is necessary because the Constitution holds the Prime Minister and his team of ministers responsible to the Lok Sabha. But the Constitution does not bar the President from appointing a person as a Minister who belongs to the Rajya Sabha, one who is not a member of the legislature if that person has been chosen as leader of majority party. In the last case the President can appoint the Prime Minister from outside the Parliament for a period of six months and such a person must get himself elected to the Parliament within this period.

Functions: The Constitution provides a unique position to the Prime Minister. It assigns the following functions and powers to the Prime Minister:

(a) He selects other ministers: The Prime Minister is the master of the Government. The Constitution provides that other ministers shall be appointed by the President on the advice of the Prime Minister. Since the advice of the Prime Minister in the appointment of the other ministers is invariably accepted, the choice really is that of the Prime Minister.

Although all executive authority of the Union is vested in the President, it is invariably exercised by the Prime Minister and his Council of Ministers. It is the Prime Minister who determines and assigns business to various ministers.

(b) He presides over Cabinet meetings: The policies of the Government are formulated and decisions made in Cabinet meetings. The Prime Minister wields a great control and enjoys a pre-eminent position in influencing Cabinet decisions. As Chairman of the Council of Ministers, he exercises a casting vote.

(c) He is the link between the President and the Cabinet: It is the Prime Minister who keeps the President informed of the decisions of the Council of Ministers.

(d) He guides the ministers: It is one of the important functions of the Prime Minister to coordinate the policies of the various departments and ministers. He, therefore, guides the various ministers and exercises general supervision over all the departments.

(e) He is the leader of the House: Inside Parliament, the Prime Minister is the leader of the Lok Sabha and the chief spokesman of the Government. He shapes the domestic and foreign policies of the country. He is responsible for piloting all important legislations affecting policy matters.

The Prime Minister of India is also the Chairman of the Planning Commission.

Term of Office: The Prime Minister holds office during the pleasure of the President. Normally, the President cannot dismiss the Prime Minister at will because the former is convention-bound to recognise the person commanding leadership of the majority party in the Lok Sabha as the Prime Minister. The Prime Minister holds office till new Lok Sabha is elected. Even where the Lok Sabha is dissolved by the President, he can ask the Prime Minister to hold office till the new Lok Sabha is elected.

UNION COUNCIL OF MINISTERS

The Union Council of Ministers exercises the executive powers which are theoretically vested in the President. It is composed of all the Union Ministers—Cabinet Ministers, Ministers of State and Deputy Ministers. Cabinet Ministers are those who are members of the Cabinet. Thus, it forms a part of the Council of Ministers. It is the real policy-making body of the Council and is constituted of its senior members.

The procedure for the formation of the Council of Ministers is: "The Prime Minister shall be

by the President and the other ministers appointed by the President on the advice of the Prime Minister." In practice, however, the President has little choice in the appointment of the Prime Minister because he has to "select" the leader of the majority party in the Lok Sabha. The members of the Council of Ministers are appointed by the President as proposed by the Prime Minister. Every member of the Council of Ministers must either be a member of Lok Sabha or Rajya Sabha, or he must get elected to either house within six months of his appointment as minister. If he fails to do so, he must resign from the Council of Ministers.

The Cabinet occupies a pivotal position in the Council of Ministers. It has enormous powers and responsibilities covering administrative, legislative and financial matters. It frames the general executive policy of the Indian Union. One of its members is in charge of one or more departments. It also prepares legislation for the Parliament. It prepares the budget, thereby determining the sources of revenue and avenues of expenditure. It also frames the foreign policy of the government. The Cabinet is meant to aid and advise the President and it is obligatory on the part of the latter to accept the advice. Every decision of the Cabinet is made in the name of the President.

The executive and the legislative functions meet in the Cabinet very prominently. All ministers are members of either house of Parliament. They attend the meetings of the Parliament, move and pilot bills, participate in debates, answer questions and explain their policies. The Cabinet is responsible to the Lok Sabha. The Council of Ministers remains in power only so long as it enjoys the confidence of the House, i.e., the support of a majority of its members. It must be pointed out that the Cabinet is collectively responsible to the Lok Sabha. It is a team and its members sink or swim together. The action of one minister commits the entire Cabinet. If the Lok Sabha registers lack of confidence in one minister, the whole Council of Ministers has to go.

The Council of Ministers works under the leadership of the Prime Minister. The Prime Minister enjoys vast powers. He selects members of the Council and distributes portfolios among them. He presides over the meetings of the Cabinet. He can change members of the Council by demanding the resignation of any one and appointing any other instead. If he resigns the Council is deemed to have been dissolved. In case of differences of opinion between any member of the Council and the Prime Minister, it is the former who must

resign from the Council of Ministers. The supremacy of the Prime Minister provides necessary platform to the collective responsibility of the Council. He is the chief spokesman of the Government in Parliament. The Prime Minister is also the chief link between the Council and the President. He keeps the President posted with such information regarding the administration of proposals for the legislation as the President may call for.

But the Prime Minister is only a leader and not a boss. Normally, the members of the Council of Ministers are drawn from the same political party and all of them are important party leaders and the Prime Minister cannot maintain his position without their cooperation and goodwill.

PARLIAMENT

Parliament is the central legislature of the Indian Union. It is a bicameral legislature and consists of the President, the Rajya Sabha (the upper house) and the Lok Sabha (the lower house). In matter of legislation, both houses have co-equal powers except in the case of Money Bills with respect to which the Lok Sabha enjoys supreme. The President is an integral part of Parliament and all Bills passed by it must receive his assent before becoming laws. The President summons and prorogues the Parliament and dissolves the Lok Sabha.

Lok Sabha: The Lok Sabha whose life is five years (the life was raised to six years during the emergency with the 42nd Amendment but reduced to five years has been maintained with the 44th Amendment), is the lower house of Parliament and comprises of members directly elected by the people. Every citizen of India who is 18 years of age and also is not otherwise disqualified, has been given the right to vote. To qualify as a candidate for election to the Lok Sabha, one must be a citizen of India and should be of not less than 25 years of age. A person is disqualified if (a) he holds any office of profit under the Government; (b) he is of unsound mind; (c) he is an undischarged insolvent; (d) he is not a citizen of India or has voluntarily acquired the citizenship of some foreign state; (e) he is disqualified by or under any law made by Parliament. There are constitutional disqualifications. In addition, there are a number of statutory disqualifications.

The strength of the Lok Sabha is 530 elected members from the Union territories and 13 elected members from the Scheduled Castes and Scheduled Tribes. Provision also exists for the nomination of members for Scheduled Castes and Scheduled Tribes. At present 79 seats are reserved for Scheduled Castes and 41 for Scheduled Tribes.

as per the 84th Amendment to the Constitution, reservation for SC/ST's as also for Anglo-Indians (2) has been extended for a further period of 10 years till 2010. Not more than two members of the Anglo-Indian community can be nominated by the President to the Lok Sabha if this community is not adequately represented therein. The membership from the States is on the basis of their population. For this purpose, each State is divided into constituencies.

The Lok Sabha elects two of its members to be its Speaker and Deputy Speaker. Both are elected for the life of the Lok Sabha which is normally five years. The Speaker is the Chairman of the Lok Sabha. He does not vote but he can use his casting vote in case of a tie. He certifies whether a particular bill is a money bill or not. He presides over the joint sitting of the Lok Sabha and the Rajya Sabha. The Speaker or the Deputy Speaker does not preside when a resolution for his removal is discussed by the house; he has the right to speak and participate in the proceedings of the House when such a resolution is discussed.

The Lok Sabha is the more powerful of the two houses. No bill can become law unless it has been passed by the Lok Sabha. The Lok Sabha shares with the Rajya Sabha the power of amending the Constitution. It can also prefer a charge of impeachment against the President. The elected members of this house form a part of the electoral college for the election of the President. The Vice-President is also elected by members of this house jointly with the members of the Rajya Sabha.

Though the President is the supreme commander of the armed forces, the exercise of the power is regulated by law. Parliament has the exclusive legislative power with regard to defence forces and war and peace. It can be said that Parliament controls the entire country, the Lok Sabha exercising greater control.

Rajya Sabha: The Rajya Sabha is the upper house of the Parliament and is constituted of representatives from the States or the constituent units of the Indian Union. It is a permanent body, one-third of its members retiring after every two years. Thus, every member enjoys six years' term. The Constitution has fixed the maximum limit of its membership at 250 which comprises of 238 representing the States and Union Territories and 12 to be nominated by the President to give representation to persons of distinction in the spheres of art, science, literature and social service. The representatives from the States and Union Territories are elected indirectly by the elected members of State legislatures.

A candidate for election to membership of the Rajya Sabha must be a citizen of India and not less than 30 years of age. A person is disqualified if (a) he holds any office of profit under the Government; (b) he is of unsound mind; (c) he is an undischarged insolvent; (d) he is not a citizen of India or has voluntarily acquired the citizenship of some foreign state; and (e) he is disqualified by or under any law made by Parliament.

The Vice-President is the ex-officio Chairman of the Rajya Sabha. The Deputy Chairman is elected from amongst the members of the Rajya Sabha.

The legislative authority of Rajya Sabha is co-extensive with that of Lok Sabha. No measure can become law unless it has been passed by the Rajya Sabha. It exercises control over the Union administration by eliciting information through questions and motions of the adjournment or censure.

The financial powers of the Rajya Sabha are not at par with those of the Lok Sabha. No money bill can be introduced or can originate in the Rajya Sabha. All money bills passed by the Lok Sabha are sent to the Rajya Sabha for its recommendation. The Rajya Sabha must return such bills with its recommendation within 14 days. If it returns the bills with some amendments, the Lok Sabha is required to reconsider it. It may or may not accept the recommendations of the Rajya Sabha. After reconsideration, the bill is deemed to have been passed by both the houses.

In case of other bills, the Lok Sabha does not enjoy this overriding authority. If there is no agreement between the two houses over a legislative bill, or the Rajya Sabha does not return the bill within six months after receiving it from the Lok Sabha, the President can summon a joint session of both houses. The bill is passed if the majority of members present and voting approve of it. It is obvious that at the joint sitting, the voice of the Lok Sabha normally must prevail.

The Rajya Sabha shares with the Lok Sabha the power of amending the Constitution. It can also originate any bills other than a money bill; prefer the charge of impeachment against the President. The elected members of the Rajya Sabha take part in the election of the President. The Vice-President is elected by members of both the Houses assembled at a joint sitting.

DELEGATED LEGISLATION

The legislature has now to make so many laws that it has no time to devote to all the legislative details and sometimes the subject on which it has to legislate is of such a technical nature that all

it can do is to state the broad principles and leave details to be worked out by those who are more familiar with the subject. Again when complex schemes of reforms are to be the subject of legislation, it is difficult to bring out a self-contained and complete act straightaway, since it is not possible to foresee all the contingencies and envisage all the local requirements for which provision is to be made. There may also arise emergencies and urgent situations requiring prompt action and the entrustment of large powers to authorities who have to deal with the various situations as they arise.

The legislature cannot part with its essential legislative function which consists in the determination of the legislative policy and of formally enacting that policy into a binding rule of conduct. It is open to the legislature to formulate the policy as broadly and with as little or as much details it thinks proper and it may delegate rest of the legislative work to a subordinate authority who will work out the details within the framework of that policy. So long as a policy is laid down and a standard established by a statute, no constitutional delegation of legislative power is involved in leaving the selected instrumentalities, the making of subordinate rules within prescribed limits and the determination of facts to which the legislation is to apply.

According to our Constitution the power of law-making can be exercised by the Union Parliament or a State legislature which is to be constituted in a particular manner and the process of legislation has been described in detail in various articles. Powers have been given to the President in Article 123 and to the Governor of a State under Article 213 to promulgate ordinances during recess of the respective legislatures. Specific provisions have also been made for exercise of the legislative powers by the President on proclamation of emergency and in respect of Union Territories.

Law-making undoubtedly is a task of highest importance and responsibility and our Constitution has entrusted this task to particular bodies of persons in particular ways. Not only does it set up a machinery for law-making but regulates the method by which it is to be exercised and makes specific promises for causes where departure from the normal procedure has been sanctioned. The *prima facie* presumption must be that the intention of the Constitution is that the duty of law-making is to be performed primarily by the legislature itself. The power of Parliament to confer on the President to delegate the power so conferred to any other authority has been

recognised only as an emergency provision in Article 357 of the Constitution. Save and except this, there is no provision in the Constitution for delegated legislation.

Delegation of legislative authority can be permissible but only as ancillary to or in aid of the exercise of law-making power by the proper legislature and not as meant to be used by the latter or relieve itself of its own responsibility or essential duties by devolving the same on some other agent or machinery.

Parliamentary Privileges: The Constitution provides for freedom of speech in the Parliament. No Member of Parliament can be held liable to any proceedings in any court in respect of anything said or any vote given by him in Parliament or any of its Committees. In other respects, the powers, privileges and immunities of each House of Parliament and of the Members and the Committees of each House shall be such as may from time to time be defined by Parliament by law. The validity of any proceedings in Parliament shall not be called in question on the ground of any irregularity of procedure.

Leaders of Opposition in Parliament: Giving cognizance to the important role of the Leader of Opposition in Parliamentary Democracy, statutory recognition has been accorded to the Leaders of Opposition in the Rajya Sabha and the Lok Sabha. They also get salary and certain facilities to enable them to discharge their functions in Parliament. Necessary legislation for this was enacted in July 1977.

PARLIAMENTARY COMMITTEES

There are Parliamentary Committees to assist the Parliament in its deliberations. These are appointed or elected by the respective House of Lok Sabha and Rajya Sabha on a motion made or are nominated by their presiding officers, i.e., the Speaker and the Chairman respectively.

There are three financial committees:

(1) Public Accounts Committee (2) Estimates Committee and (3) Committee on Public Undertakings. These three standing committees constitute a distinct class and between them keep a vigil over Government spending and performance.

Public Accounts Committee: It examines the Appropriation Accounts of the Government of India and the report of the Comptroller and Auditor-General thereon. It ensures that public money is spent in accordance with the Government's decision and calls attention to any irregular or extravagant use of public money.

Estimates Committee: It reports on "what economies, improvements in organisation, efficiency or administrative reforms, consistent with the policy underlying the estimates" may be effected. It also examines whether the money is well laid out within the limits of the policy implied in the estimates and suggests the form in which the estimates shall be presented to Parliament.

Committee on Public Undertakings: It examines the reports and accounts of certain specified public undertakings and reports of the Auditor-General thereon, if any. It also examines whether the public undertakings are being run efficiently and managed in accordance with sound business principles and prudent commercial practices.

The control exercised by these Committees is of continuous nature. They gather information through questionnaires, memoranda from representative non-official organisations and knowledgeable individuals, on-the-spot study of organisations and oral examination of official and non-official witnesses.

Besides these three financial Committees, the other Standing Committees of Parliament are:

(i) **Committee on Privileges** which examines any question of privilege referred to it by the House or the Speaker.

(ii) **Committee on Petitions** which examines petitions on Bills and on matters of public interest and also entertains representations on Central subjects.

(iii) **Committee on Subordinate Legislation** which scrutinises whether the power to make rules, regulations, sub-rules and bye-laws conferred by the Constitution or delegated by Parliament are properly exercised by the Government within scope of such delegation.

(iv) **Committee on Government Assurances** which keeps track of the assurances given by Ministers on the floor of the House and pursues them till they are implemented.

(v) **Committee on Papers laid on the Table** which examines all the papers laid on the table of the House by Ministers.

(vi) **Business Advisory Committee** which recommends the allocation of time for all items to be brought before the House.

(vii) **Committee on Private Members' Bills and Resolutions** which deals with classification and allocation of time to Bills from private members, recommends allocation of time for discussion of private members' resolutions, and examines Constitution Amendment Bills given notice of by

private members before their introduction in the Lok Sabha.

(viii) **Committee on Absence of Members from the Sittings of the House** which considers leave applications of members.

(ix) **General Purposes Committee** which considers and advises the Speaker on matters concerning the affairs of the House.

(x) **House Committee** which deals with residential accommodation, medical aid and other amenities to the members of Parliament.

(xi) **Library Committee** which advises the Speaker on matters pertaining to the maintenance and upkeep of the Parliament Library.

(xii) **Rules Committee** which considers matters of procedure and conduct of business in the House and recommends any amendments or addition to the rules of procedure.

(xiii) **Committee on the Welfare of Scheduled Caste and Scheduled Tribes** which considers matters relating to their welfare and watches whether the constitutional safeguards given to them are being properly implemented.

(xiv) **Joint Committee on Salaries and Allowances of Members of Parliament** which deals with salaries and allowances, frames rules in respect of matters like medical, housing, telephone, postal facilities, etc.

(xv) **Joint Committee on Offices of Profit** which examines the composition and character of the boards and other bodies appointed by the Central and State Governments in order to recommend which offices ought to or ought not to disqualify a person from being a member of either House of Parliament. Besides these permanent Committees, *ad hoc* committees are constituted from time to time either by Lok Sabha or by the Speaker to enquire into a report on specific subjects. Examples of such committees are the Select or Joint Committees on bills which are appointed to consider and report on particular bills.

The Rajya Sabha also has a similar Committee structure except for the fact that it does not have the financial committees and a few other committees, namely, the Committee on Absence of Members, the Committee on Private Members' Bills and Resolutions and the Committee on the Welfare of Scheduled Castes and Scheduled Tribes. Members of the Rajya Sabha are, however, associated with two of the financial committees, viz, the Committee on Public Accounts and the Committee on Public Undertakings, and with the Committee on the Welfare of the Scheduled Castes and Scheduled Tribes.

CONSULTATIVE COMMITTEES

There are consultative committees for different ministries and departments, which provide a forum for discussion between members of Parliament and the ministries. These committees function in accordance with the guidelines evolved by the Government in consultation with leaders of opposition parties and groups.

Implementation of Assurances: The Department of Parliamentary Affairs collects assurances, promises, undertakings, etc., given by Ministers in both the Houses of Parliament from the daily proceedings and forwards them to concerned ministries/departments for implementation. It also collects necessary information from concerned ministries/department and after due scrutiny, statements showing action taken by the Government in implementation of assurances are laid periodically on the table of the Houses by the Minister of Parliamentary Affairs.

SERVICES UNDER THE CONSTITUTION

Under the English common law all servants of the Crown hold office during the pleasure of the Crown and are liable to be dismissed at any time and without any reason being assigned for such dismissal. No action lies against the Crown in respect of such dismissal, even though it may be contrary to the express terms of the contract of employment. A servant of the Crown cannot sue the Crown even for arrears of his salary.

But Indian law has not adopted this rule in its entirety and with all its rigorous implications. The Indian Constitution has provided several safeguards for the security of civil servants. Articles 124, 148, 218 and 324 provide expressly that Supreme Court Judges, the Auditor-General, High Court Judges, and the Chief Election Commissioner *shall not be removed* from their office except by an order of the President passed after an address by each House of Parliament. Subject to these exceptions our Constitution has adopted the English common law that public servants hold office during the pleasure of the President or the Governor.

Dismissal, Removal, etc.: In the case of persons employed in the services, whether temporarily or permanently:

(i) No person who is a member of civil service of the Union or an all-India service or a civil service of a State can be dismissed or removed by an authority subordinate to the authority by which he was appointed. It is enough that the

removing authority is of the same rank or grade.

(ii) No civil servant can be dismissed or removed or reduced in rank except after an inquiry in which he has been informed of the charges against him and given a reasonable opportunity of being heard in respect of those charges and where it is proposed, after such inquiry, to impose on him any such penalty, until he has been given reasonable opportunity of making representation on the penalty proposed, but only on the basis of the evidence adduced during such inquiry.

Mandatory Provisions: The provisions of Article 311 are mandatory and if a civil servant is removed or dismissed without observing the provisions of Article 311, he can demand a declaration from the court that the order of dismissal or removal was void and inoperative and he continued to be a member of the Civil Services. It must, however, be noted that the protections provided by Article 311 are available only when the appointment has been duly made. Therefore, where concurrence of the Public Service Commission is essential before making an appointment and no such concurrence is obtained, the person appointed has no right to claim constitutional protection.

AUTONOMOUS OFFICES UNDER THE CONSTITUTION

Comptroller and Auditor-General: The Comptroller and Auditor-General of India is appointed by the President. The procedure and the grounds for his removal from office are the same as for a Supreme Court Judge. He is not eligible for further office under the Union or a State Government after he ceases to hold his office. The President, on the advice of the Comptroller and Auditor-General of India, prescribes the form in which the accounts of the Union and of the States are to be maintained. His reports on the accounts of the Union and of the States are submitted to the President and the respective Governments and are placed before Parliament and State Legislatures.

Attorney-General: The Attorney-General of India is appointed by the President to hold office during the pleasure of the President. He must be a person qualified to be appointed a Judge of the Supreme Court. He gives advice to the Government of India upon such legal matters and performs such other duties of a legal character as may be referred or assigned to him by the President. In the performance of his duties, he has the right to audience in all courts in India as well as to

right to take part in the proceedings of Parliament but no right to vote.

Union Public Service Commission: For recruitment to civil services and posts under the Union Government, the Constitution provides for an independent body known as the Union Public Service Commission. The chairman and members of the Commission are appointed by the President. To ensure independence of the Commission, the Constitution debars its chairman from further employment either under the Government of India or the Government of a State. A member of the Commission is, however, eligible for appointment as chairman of that Commission or of a State Public Service Commission.

Election Commission: The Election Commission is a statutory body set up under Article 324 of the Constitution of India for superintendence, direction and control of the preparation of the electoral rolls for, and the conduct of elections to the Parliament and to the legislature of every State and of the elections to the offices of the President and Vice-President of India. The Election Commission has also (i) to lay down general rules for election, (ii) to determine constituencies and to prepare electoral rolls, (iii) to give recognition to the political parties, (iv) to allot election symbols to political parties and individuals contesting the elections, and (v) to appoint election tribunals to decide disputes and doubts arising as a result of election to Parliament and State Legislatures.

The Election Commission is headed by the Chief Election Commissioner, and is a three-member commission in which all the three members have powers equal to that of the Chief Election Commissioner. Independence of Election Commission is sought to be protected by special constitutional provision under Article 324(5) to the effect that he shall not be removed from his office except in a like manner and on the like grounds

Judge of the Supreme Court. The term of office is six years from the date he assumes office or till the day he attains the age of 65 years whichever is earlier. Election Commissioners are entitled to the salary and other facilities equivalent to that of a Judge of the Supreme Court (Rs. 30,000 per month).

PROCLAMATION OF EMERGENCY

The emergency provisions are intended to be resorted to in periods of grave national peril and as a general rule must not be continued for any period beyond which it is absolutely necessary.

Kinds of Emergency: The Constitution of India envisages three kinds of emergencies. These are:

(i) Emergency arising out of war, external aggression or armed rebellion.

(ii) Emergency arising out of the failure of constitutional machinery in the States.

(iii) Emergency arising out of the threat to financial stability or credit of India.

The President himself is the sole judge to determine whether an emergency has arisen or not and his satisfaction in declaring emergency is not justiciable.

National Emergency: When the President is satisfied that there is a grave danger to the security of India either from external aggression or armed rebellion he may declare emergency. The President can declare national emergency even before anything serious actually takes place if he is satisfied that there is an imminent danger thereof. Under this emergency, the Parliament acquires powers to frame laws regarding the subjects mentioned in the State List. The Parliament can issue direction to any State regarding the conduct of executive business. The President can also modify the distribution of revenue between the Union and the States. All this amounts to the suspension of internal autonomy of the different States. The declaration of emergency of this kind further empowers the President to suspend the operation of the Fundamental Rights and their constitutional guarantees, given in Articles 19 and 32. No citizen can then have the right to move a court of law for the enforcement of these rights.

The proclamation of emergency as stated above needs to be approved by the Parliament voting separately in both the Houses within two months from the date of proclamation. If the Lok Sabha is dissolved before the expiry of this period of two months the proclamation must be approved by the Rajya Sabha within two months and by the Lok Sabha 30 days after the first date of meeting after its re-election. The Constitution does not place any time limit on the period for which this emergency is to continue once it is approved by the Parliament. It will continue till it is revoked by a subsequent proclamation. Such an emergency was declared by the President on October 6, 1962 in the wake of China's attack on India which was lifted in January 1968. The state of general emergency was declared for the second time by the President of India on December 3, 1971 following Pakistan's treacherous attack on Indian air bases in the eastern and western sectors. The second type of emergency due to internal disturbance was declared on June 26, 1975. Both the emergencies were lifted in March 1977.

Constitutional Emergency: If the President is satisfied either on the recommendation of the Governor or otherwise that the Government of a particular State cannot be carried on in accordance with the Constitution, he may declare emergency in that State. Under such an emergency the President may assume to himself any or all functions of the Government of the State concerned and all or any of the powers of the Governor of the State.

He may declare that the powers of the State legislature shall be exercisable by the Parliament. He may suspend the Constitution relating to any authority in the States except that he cannot assume any of the powers of the High Court. He may dissolve the State Legislature and dismiss the State Council of Ministers.

This type of emergency ceases to be effective after two months unless approved by the Parliament in the meanwhile. It cannot be issued for more than one year at a time but it can be extended every year, up to a maximum period of three years. All extensions to the life of such a proclamation must be approved by the Parliament.

Financial Emergency: The President may declare financial emergency if he is satisfied that there is threat to financial stability or credit of the country as a whole or a part thereof. In such a case, he may give such directions to any State as he may deem fit and ask it to observe certain canons of financial propriety. He may order reduction in the salaries and allowances of all or any class of persons serving in connection with the affairs of a State, may order reduction in the salaries and allowances of all or any persons serving in connection with the affairs of the Union including the Judges of the Supreme Court and the High Court. He may require a State to submit before him all money bills for his assent after they are passed by the State legislature.

Such proclamation of emergency will expire after a period of two months unless approved by Parliament. It can extend its life by one year at a time and the maximum lease of this type of emergency is three years.

SUPREME COURT

The Supreme Court is the highest and final judicial tribunal of India. It consists of a Chief Justice and not more than 25 other Judges, all appointed by the President. The Judges hold office till the age of 65. For appointment as a Judge of the Supreme Court, a person must be a citizen of India and must have been for at least five years a judge of a High Court or of two or

more such courts in succession; or an advocate of a High Court or of two or more such courts in succession for at least ten years; or he must, in the opinion of the President, be a distinguished jurist. Provision has also been made for the appointment of a judge of a High Court as an *ad hoc* judge of the Supreme Court and for retired Judges of the Supreme Court or of High Court to sit and act as Judges of the Supreme Court. The Constitution debars a retired judge of Supreme Court from practising in any court of law or before any other authority in India. The Chief Justice of India receives a monthly salary of Rs. 33,000 and other judges of the Supreme Court Rs. 30,000.

A judge of the Supreme Court cannot be removed from office except by an order of the President, passed after an address by each house of Parliament supported by a majority of the total membership of that house and by a majority of not less than two-thirds of the members present and voting, has been presented to the President in same session for such removal on the ground of proven misbehaviour or incapacity.

The Supreme Court has both original and appellate jurisdiction. Its exclusive original jurisdiction extends to all disputes between the Union and State or States *inter se*. In addition, the Constitution gives an extensive original jurisdiction to the Supreme Court in regard to the enforcement of Fundamental Rights guaranteed by the Constitution.

The appellate jurisdiction of the Supreme Court can be invoked by a certificate of the High Court concerned, or by special leave granted by the Supreme Court, or in civil matters where the amount involved is not less than Rs. 20,000 or where the High Court concerned certifies an appeal. In criminal cases, a right to appeal to the Supreme Court has been provided for in certain cases.

The Supreme Court has appellate jurisdiction over all courts and tribunals in India and special advisory jurisdiction in matters which may specially be referred to it by the President.

GOVERNOR OF STATE

The Governor is the chief executive head of the State in the Indian Union. He is aided and assisted in the discharge of his functions by a Council of Ministers. The Council of Ministers is collectively responsible to the Legislative Assembly of the State concerned. The Governor is a mere constitutional head of the State and the real and effective authority with respect to administration of the State is exercised by the ministers.

Qualifications and Conditions of Appointment: The Governor is appointed by the President and holds office during the pleasure of the President. His term of office has been fixed at five years but this period can be extended until his successor enters upon his office. He can be removed earlier by the President if he so desires. He has also the option to resign at any time during the term of his office. For being appointed a Governor, a person (i) must be a citizen of India; (ii) must have completed 35 years of age; (iii) must not hold any other office of profit; (iv) must not be a member of either house of Parliament or of any State legislature. In case he is a member of legislative body in India, he will have to resign before taking over the charge of his office.

Emoluments: He draws a monthly salary of Rs. 36,000 plus other allowances befitting his position and status. He is provided with free residential accommodation with all other facilities.

Functions: The Constitution lays down that the executive powers of a State shall be vested in the Governor and all executive actions shall be taken in his name. He makes rules for the convenient transaction of the business of the State Government. The powers of the Governor may be grouped under the following heads:

(i) **Executive:** The Governor appoints the Council of Ministers with the Chief Minister as its head and they hold office at his pleasure. He also appoints important officials of the State like the Advocate General, the Chairman and Members of the State Public Service Commission, judicial appointments below those of Judges of High Courts, etc. He is consulted by the President while making appointment of High Court Judges.

The Chief Minister must communicate to the Governor all decisions of the Council of Ministers relating to administration and legislation.

(ii) **Legislative:** He summons, adjourns and prorogues the State legislature. He can dissolve Legislative Assembly, which is the lower house of the State legislature. All bills passed by the legislature must be referred to him for final approval. At the commencement of the first session of the State legislature every year, the Governor delivers an address. He enjoys the powers of promulgating ordinances during the recess of the State legislature, but such ordinances cease to be effective six weeks after the reassembly of the legislature unless approved earlier. The Governor nominates one-sixth of the total strength of the Legislative Council from amongst distinguished people in the sphere of science, arts, literature, co-operative movement and social services.

(iii) **Financial:** No money bill or financial measure or amendment of financial matters can be introduced in the Legislative Assembly without the recommendation of the Governor. The Governor sees that the budget is laid before the State legislature every year. But the Governor must give his assent to a money bill. He has no veto power in case of money bills.

(iv) **Judicial:** The Governor has the power to pardon, commute or suspend sentence of any person convicted of any offence relating to the executive power of the State.

(v) **Miscellaneous:** During emergency, the Governor can act regardless of the advice of his ministers. But he must act according to the directions of the President.

STATE LEGISLATURE

Every State has a legislature consisting of one house or two houses, as the case may be. The State legislatures of Bihar, Jammu and Kashmir, Karnataka, Maharashtra and Uttar Pradesh have two houses each, whereas all other States have only one house each. The State legislature consists of the Governor and one or two houses. The lower house is known as Legislative Assembly (Vidhan Sabha), which has a life of five years, and the upper house is called Legislative Council (Vidhan Parishad), which, like the Rajya Sabha, is a permanent house, one-third of its members retiring at the expiration of every second year.

If the Legislative Assembly of the State concerned passes a resolution by a majority of the total membership and by a two-thirds majority of the members present and voting expressing a desire either for abolition or creation of the Legislative Council, the Parliament enacts an ordinary law accordingly. The Legislative Assembly of each State consists of not more than 500 and not less than 60 members chosen by direct election from territorial constituencies in the State. The total number of members in the Legislative Council does not exceed one-third of the strength of the Legislative Assembly subject to a minimum of 40 members. The Legislative Assembly can be dissolved sooner than its life of five years but the Legislative Council cannot be dissolved.

A Legislative Assembly consists of members elected directly by the people of the State on the basis of adult franchise. A candidate for the Assembly should be a citizen of India and not less than 25 years of age. He should not be holding any office of profit under the Government and should possess sound mental and physical health. He should not be an undischarged insolvent.

For becoming a member of the Legislative Council, a person should possess the same qualifications as for becoming a member of the Assembly, except in respect of age which has been fixed at 30 years. The members of the Council are directly elected by the people of the State.

A legislative measure may take its origin either in the Council or in the Assembly and it must be passed through the two houses before it can be presented to the Governor for assent. But if the Council rejects the bill passed by the Assembly or the Council does not consider it for three months or passes it with amendments which are not acceptable to the Assembly, the Assembly may again pass it and send it to the Council. If the Council rejects it for the second time or does not pass it within one month from the date of its receipt by the Council or it is passed with amendments to which the Assembly does not agree, then the bill is deemed to have been passed by the two houses in the form in which it was passed by the Assembly.

The Legislative Council has no financial powers.

The Council of Ministers is collectively responsible to the Assembly. A hostile vote of the Legislative Council cannot end the life of ministry.

The Assembly chooses its own Speaker and Deputy Speaker from amongst its members. They can be removed by a resolution supported by a majority of the then members of the Assembly.

The State legislature is competent to make laws on all subjects on the State List and the Concurrent List. In the latter case it has no exclusive right. Some laws passed by the State legislature require assent of the President. While proclamation of emergency is in operation, Parliament has the overall power to legislate even on matters enumerated in the State List.

The Council of Ministers is formed out of the majority party in the Assembly and is collectively responsible to it. The Assembly may censure the Government and express lack of confidence in the Council of Ministers. If such a motion succeeds, the ministry resigns resulting in the formation of a new ministry by the leader of the opposition or after fresh elections.

The elected members of the Assembly take part in the electoral college for electing the President of India.

STATE JUDICIARY

The Constitution envisages the establishment of a High Court in each State. The Parliament may by law establish a common High Court for two or more States, extend the jurisdiction of a certain High Court to a certain Union Territory or exclude

such jurisdiction. The High Court is at the head of the judicial hierarchy of the State which consists of various subordinate courts. A High Court consists of a Chief Justice and some other judges. The number of Judges is to be determined by the President of India from time to time.

The Chief Justice and other Judges are appointed by the President in consultation with the Chief Justice of India and the Governor of the State concerned. The monthly salary of Chief Justice is Rs. 30,000 and of a judge of the High Court Rs. 27,000. In case of the appointment of a Judge other than the Chief Justice, the Chief Justice of the High Court concerned must also be consulted. The Constitution does nowhere provide whether the President should be bound by the consultations and suggestions from various officers mentioned above.

Qualifications: A person to be appointed as Judge of a High Court must possess these qualifications: (i) He must be citizen of India; (ii) he must have held a judicial office in the territory of India for at least ten years or he should be an advocate of a High Court or of two or more such courts in succession for at least ten years; (iii) he, in the opinion of the President, is a distinguished jurist.

Conditions of Service: The Chief Justice of a High Court in a State draws a salary of Rs. 9,000 per month and the other judges get Rs. 8,000 per month apart from various other allowances. Salaries and other allowances of the Judges cannot be altered to their disadvantage during the course of their service except in the case of financial emergency. Like the judges of Supreme Court, the Judges of the High Courts have been given complete security of service. They continue in office during good behaviour and retire at the age of 62. A Judge can only be removed from office by the President after an address has been presented to him by each house of Parliament for his removal. Such an address must be passed by a majority of not less than two-thirds of the members present and voting. A Judge may be transferred from one High Court to another by the President after consultation with the Chief Justice of India.

Functions: High Courts perform three functions: (a) judicial and (b) administrative. Regarding judicial functions, a High Court has original, appellate and revisionary jurisdiction in respect of revenue and its subordinate courts. It enforces the enforcement of fundamental rights and writs. It has appellate jurisdiction in civil and criminal cases against the decision of subordinate courts. Every High Court has a Bench at the State capital and may have other Benches at other places.

its proceedings and decisions are referred to in all future cases. It has the power to punish for contempt.

Administrative Functions: A High Court stands at the apex of the judicial system in the State. It supervises the working of all subordinate courts and frames rules and regulations for the transaction of business. It can also examine the records of its subordinate courts. However, it does not have any power of superintendence over any court or tribunal constituted under any military law.

SCHEDULES TO THE CONSTITUTION

Constitution of India now contains twelve Schedules, which are an integral part of the Constitution. A brief summary of these Schedules is given below:

First schedule: It contains the list of the States and the Union Territories comprising the Indian Union.

Second schedule: It has five parts:

Part A fixes the remunerations and emoluments payable to the President of India and Governors of the State.

Part B was deleted from the Constitution by the Constitution (7th Amendment) Act, 1956.

Part C contains provision as of the Speaker and Deputy Speaker of the House of People, Chairman and Deputy Chairman of the Council of States and the Speaker of Legislative Assemblies and Chairman and Deputy Chairman of the Legislative Councils.

Part D fixes the emoluments of the Judges of the Supreme Court and the High Courts.

Part E contains provision of the Comptroller and Auditor-General of India

Third schedule: It contains the Oaths and affirmations.

Fourth schedule: It contains the allocation of seats of each State and Union Territory in the Council of States.

Fifth schedule: It provides for the administration and control of scheduled areas. It can be amended by a simple majority of the Parliament.

Sixth schedule: It provides for the administration of Tribal areas in Assam, Meghalaya and Mizoram and goes into the details of the administration in these areas. It can be amended by a simple majority of the Parliament.

Seventh schedule: It gives the allocation of powers and functions between the Union and the States. It contains three lists: (1) Union List of

97 subjects over which the Union Government has an exclusive authority, (2) State List of 66 subjects over which States have exclusive authority and (3) Concurrent List of 47 subjects over which the Union and the States have concurrent powers.

Eighth schedule: It contains a list of 18 languages of India recognised in the Constitution. These are:

(1) Assamese (2) Bengali (3) Gujarati (4) Hindi (5) Kannada (6) Kashmiri (7) Konkani (8) Malayalam (9) Manipuri, (10) Marathi (11) Nepali (12) Oriya (13) Punjabi (14) Sanskrit (15) Sindhi (16) Tamil (17) Telugu (18) Urdu.

Ninth schedule: It was added by the Constitution (1st Amendment) Act 1951. It contains Acts and Orders relating to land tenure, land tax, railways, industries, etc., passed by the Union Government and the State Governments (including Jammu and Kashmir), which are beyond the jurisdiction of the civil courts.

Tenth schedule: It was added by the Constitution (52nd Amendment) Act, 1985. It contains anti-defection Acts.

Eleventh Schedule: It was added by the Constitution (73rd Amendment) Act, 1992. It lays down 29 items on which Panchayats shall have powers and authority to function as institutions of self-government.

Twelfth Schedule: It was added by the Constitution (74th Amendment) Act, 1992. It lays down 18 items on which Municipalities shall have powers and authority to function as institutions of self-government.

QUASI-FEDERAL CHARACTER OF INDIAN UNION

The Constitution describes India as a Union of States and not as a federation. As explained by Dr. B. R. Ambedkar, chairman of the drafting committee, this expression indicated two important facts. First, the federation in India is not the result of an agreement between different States, as was in America, and, second, the units constituting the Indian federation had no right to secede from it. The federal features are discussed below:

(1) Distribution of powers between Centre and States: The Constitution lays down the subjects which are exclusively to be legislated by the Centre and the States as well as those which fall under the Concurrent List—the subjects which are shared by the Centre and the States such as economic planning and social security. In normal

circumstances the States are autonomous units of the Indian Union.

(2) **Constitution is the supreme law of the land:** All the Governments, whether Central or State, are strictly under the authority of the Constitution. They cannot alter the distribution of powers laid down in the Constitution nor can they override or contravene those relating to the status or powers of each.

(3) **Written Constitution:** Indian Constitution is entirely written unlike the unwritten Constitution of the United Kingdom which has a unitary form of Government. Written Constitution renders it more or less rigid. Any deviation has to be introduced in the form of amendments which can be incorporated after an elaborate procedure.

(4) **Independent Judiciary:** This is an essential feature of federal States. The judiciary acts as the interpreter and guardian of the Constitution. Every State has its own High Court and there is a Supreme Court at the Centre.

All these strictly federal principles have been modified in so many ways by the unitary bias. The unitary features of the State are as follows:

(1) **Strong Centre:** India has perhaps the strongest Centre in the world. This has been felt necessary by the framers of the Constitution. Basing their observation on India's history they said, "We perish if we make the Centre weak." Consequently, the Centre has been allocated the most important subjects (97 in number). Then there is the Concurrent List with 47 more subjects over which the Union Government can exercise legislative and administrative jurisdiction; if necessary, and in doing so, it enjoys an overriding authority over the State Governments. Further, the residuary powers are also vested in the Centre.

(2) **A Single Constitution Framework:** The component units of the Indian Union were not given the right to frame their own Constitution. According to Dr. Ambedkar, "The Constitution of the Union and the States is a single frame from which neither can get out and within which they must work." The Constitution lays down the structure of both the Union Government and the State Governments. The only exception to this feature was Jammu and Kashmir which framed its own Constitution.

(3) **Single Citizenship:** In a true federation, the people enjoy dual citizenship—that of the Centre and the State. In India, there is dual polity with single citizenship. "Every citizen has the same rights of citizenship, no matter in which State he resides."

Emoluments as laid down in Second Schedule

	Salary per mensem*
President	Rs. 50,000
Chairman of Rajya Sabha	Rs. 40,000
Governor of a State	Rs. 36,000
Chief Justice of Supreme Court	Rs. 33,000
Judge of Supreme Court	Rs. 30,000
Chief Justice of a High Court	Rs. 30,000
Judge of a High Court	Rs. 27,000
Comptroller and Auditor-General of India	Rs. 30,000

*Other allowances and privileges excluded.

(4) **Unitary in Emergencies:** A typical federation is placed in a right mould so that it cannot change into a unitary form unless the Constitution itself is amended. But "the Indian Constitution can be both unitary as well as federal according to the requirements of time and circumstances." In normal times, it works as federal. But in times of emergency, it can be converted into unitary form without any formal amendment. This is a unique feature of the Indian Constitution.

(5) **Increase in Power of Centre in Normal Times:** The Parliament can be empowered to pass laws on any of the State subjects if the Rajya Sabha declares, with two-thirds majority, that it is expedient or necessary in national interest to do so.

(6) **Parliament can reorganise States:** The Parliament is empowered to alter the territories of any State or form a new State.

(7) **Unequal Representation in Rajya Sabha:** The Constitution does not provide for equal representation in the Rajya Sabha for all the States. In a federation, each State gets equal representation irrespective of its size or population.

(8) **Appointment of Governors:** The Governors of the States are appointed by the President and they continue in office during his pleasure.

(9) **Uniformity in Basic Matters:** Indian Constitution provides for uniformity in basic matters by providing: (i) a single judiciary, (ii) a single system of civil and criminal law, and (iii) common Indian civil services. Uniformity in financial matters is ensured by the fact that the Comptroller and Auditor-General, a Union authority appointed by the President, supervises the administration of finances at the Centre and the Commission is another

(10) **Avoids Rigidity:** The Constitution is not so rigid as in the case of a federation. There is no sense of finality about it. It can be amended to suit changing conditions.

All the federal and unitary features to be found simultaneously would justify the statement

by K.C. Wheare that "India is a unitary State with subsidiary federal features rather than a federal State with subsidiary unitary features." We may, at best, describe the Indian Constitution as federal in form but unitary in spirit.

14. Amendments to the Constitution

PROCEDURE FOR AMENDMENT OF THE CONSTITUTION

The Constitution of India is federal with a unitary bias. It is neither very rigid nor very flexible. The procedure laid down by the Constitution for its amendment is neither so easy as in England nor so difficult as in the United States. The Constitution of England is highly flexible. It can be amended by a simple majority of the British Parliament. Both ordinary and constitutional laws are enacted in the same manner. The method of amendment of the Indian Constitution is as follows:

(1) A highly rigid method of amendment is provided for some provisions of the Constitution which have vital importance for the States of Indian Union. These provisions include election of the President, executive powers of the Union Government and the State Governments, legislative relations between the Union and the States, Supreme Court and State High Courts, representation of the States in Parliament.

In all these cases a constitutional amendment must be passed by the Parliament by a majority of its total membership and a two-thirds majority of the members present and voting in each house separately. It must also be ratified by at least half of the legislatures of the States before the President gives assent to it.

(2) The remaining provisions of the Constitution be amended by an absolute majority of each house and by a majority of not less than two-thirds of the members present and voting in each house of Parliament separately. A constitutional amendment in this manner becomes a part of the Constitution after receiving the assent of the President.

It may be noted that all constitutional amendments can be proposed by the Union Parliament. An amendment to the Constitution can be initiated by the introduction of a Bill in either house. The State legislatures have no authority to propose amendments.

AMENDMENTS TO THE CONSTITUTION

1. The first amendment of 1951 has permitted reasonable restrictions to be imposed by law on the exercise of the right of freedom of speech and expression and the right to practice any profession or to carry on any trade or business as contained in Article 19 of the Constitution. These new grounds of restrictions were necessary in the interest of friendly relations with foreign states or public order or on the ground of incitement of an offence. The amendment also inserted two new Articles 31A and 31B and the Ninth Schedule to give protection from challenge to land reform laws.

2. The second amendment of 1952 readjusted the scale of representation in the Lok Sabha necessitated by the completion of the 1951 Census.

3. The third amendment of 1954 added more commodities whose production and supply can be taken over by the Centre if it is considered expedient in public interest. The new items included foodstuffs, cattle fodder, raw cotton and jute.

4. The fourth amendment of 1955 has provided that when the State compulsorily acquires property for a public purpose, the scale of compensation presented by the authorising legislation would not be called in question in a court. It also excluded from the compensation clause the temporary taking over of a property by the State, either in the public interest or for its better management. Article 31A of the Constitution was also amended to extend its scope to cover categories of essential welfare legislations like abolition of Zamindari, proper planning of urban and rural areas and for effecting full control over the mineral and oil resources of the country, etc.

5. The fifth amendment of 1955 empowered the President to fix a time limit by State legislatures to express their views on proposed Central laws affecting their areas and boundaries.

6. The sixth amendment of 1956 added a new entry to the Union List relating to taxes on the

sale and purchase of goods in the course of inter-State transaction.

7. The seventh amendment of 1956 was passed for the reorganisation of the States. It involved not only the establishment of new States and alterations in State boundaries but also the abolition of three categories of the States and the classification of certain areas as Union Territories. It also provided for composition of the House of the People, readjustment after every census, provision regarding the establishment of new High Courts, High Court Judges, etc. Provision was also made for the implementation of the recommendations of the States Reorganisation Commission regarding constitutional safeguards for linguistic minorities.

8. The eighth amendment of 1959 was made to extend the special provision relating to reservation of seats for Scheduled Castes and Scheduled Tribes and representation of Anglo-Indians by nomination in the Lok Sabha and Legislative Assemblies of States for a further period of ten years from January 26, 1960.

9. The ninth amendment of 1960 gave effect to the transfer of certain territories to Pakistan following the September 1958 Indo-Pak agreement.

10. The tenth amendment of 1961 incorporated former Portuguese enclaves of Dadra and Nagar Haveli within India and provided for their administration under the regulation making powers of the President.

11. The eleventh amendment of 1961 obviated the necessity of a joint meeting of the two houses of Parliament by forming them into an electoral college for the election of Vice-President. It also made it clear that the election of President or Vice-President should not be challenged on the ground of any vacancy for whatever reason in the appropriate electoral college.

12. The twelfth amendment was passed in March 1962 by which, as of December 20, 1961, the territories of Goa, Daman and Diu became part of the territories of India. From that date they were being administered as a Union Territory.

13. The thirteenth amendment of 1962 created Nagaland as the sixteenth State in the Indian Union in pursuance of the agreement between the Government of India and the Naga People's Convention.

14. The fourteenth amendment of 1962 created legislatures in the Union Territories of Himachal Pradesh, Manipur, Tripura, Pondicherry and Goa, Daman and Diu. The legislatures are to be similar to those for the former part 'C' States. The amendment also increased Union Territories

representation in the Lok Sabha to a maximum of 25.

15. The fifteenth amendment of 1963 provided for increase in the age of retirement of High Court Judges and for provision of compensatory allowance to Judges who are transferred from one High Court to another. It also provided for appointment of retired Judges to act as Judges of High Courts. Article 226 of the Constitution was enlarged to give more powers to the High Courts to issue directions, orders or writs to any Government authority, etc. The Act also provided for the exercise of the powers of the Chairman of the Service Commission, in his absence, by one of its Members.

16. The sixteenth amendment of 1963 empowered the States to enact any legislation imposing reasonable restrictions on the exercise of fundamental rights in the interest of sovereignty and integrity of India. The oath of affirmation to be subscribed by candidates seeking election to Parliament and State legislation was amended to include that they will uphold the sovereignty and integrity of India. The purpose of the amendments is to promote national integration.

17. The seventeenth amendment of 1964 provided that where any law provides for the acquisition by the States of any land held by a person under his personal cultivation, the States cannot lawfully acquire any portion of such land within the ceiling limits unless the law ensures compensation payable at the market value.

18. The eighteenth amendment of 1966 provided for the linguistic reorganisation of Punjab into a Punjabi speaking State called Punjab and a Hindi speaking State called Haryana. It also clarified that the expression 'State' also includes a 'Union Territory'. The amendment further made it clear that the Parliament had the powers to form any new State or Union Territory by combining any part of a State or Union Territory with any other part of a State or a Union Territory.

19. The nineteenth amendment of 1966 amended Article 324 to effect a consequential change as a result of the decision to abolish Election Tribunals and to hear election petitions by High Courts.

20. The twentieth amendment of 1966 validated the appointment, posting, promotion or transfer of a person as a district judge if such appointment was illegal or void.

21. The twenty-first amendment recognised Sindhi as an official language and was included in the Eighth Schedule.

22. The twenty-second amendment of 1969 provided for the creation of an autonomous State known as Meghalaya comprising hill areas within the State of Assam.

23. The twenty-third amendment of 1969 provided for the extension of reservation of seats for Scheduled Castes and Scheduled Tribes for a further period of ten years up to January 26, 1980. The nomination of Anglo-Indians was also extended.

24. The twenty-fourth amendment of 1971 authorised Parliament to amend any provision of the Constitution according to the procedure laid down in Article 361. It also laid down that after an amendment has been carried out, it shall be presented to the President for his assent. This amendment is significant since it recognises in clearest possible terms the supremacy of Parliament as against the supremacy of the Constitution.

25. The twenty-fifth amendment of 1971 amended Article 31 regarding the right of the State to acquire private property for public purposes. The property-holders cannot move any court on the ground that compensation provided for acquiring private property is not adequate. The amendment also surmounts the difficulties in the way of giving effect to Directive Principles of State Policy. The amendment provides that any law passed by Parliament to give effect to directive principles shall not be questioned in a court of law on the ground that it abridges or takes away any of the rights contained in Articles 14, 19 or 31. The State legislatures can also make laws regarding compulsory acquisition of private property and fix any amount of compensation but such laws must also receive the assent of the President before being effective. The educational institutions run by the minorities can also be taken over by the state after payment of compensation. But the court cannot be moved for determining the reasonableness of such compensation.

26. The twenty-sixth amendment of 1971 withdrew recognition of the princes of erstwhile native States of India and stopped the payment of privy purses paid to them henceforth.

27. The twenty-seventh amendment of 1971 established Mizoram as a separate Union Territory. The North-Eastern Area (Reorganisation) Act, 1971 established the new States of Manipur and Tripura, formed the new State of Meghalaya and the new Union Territories of Mizoram and Arunachal Pradesh by the reorganisation of the existing State of Assam. The Act defined their territories and made necessary provisions regarding representation in

Parliament and in the Legislative Assemblies of States and other matters. It also constituted a common High Court of all the States in the north-eastern region and a common bar council. The common High Court also has jurisdiction over the new Union Territories. The administrator of such territories is authorised to issue ordinances with the consent of the President as circumstances demand.

28. The twenty-eighth amendment of 1972 abolished the special privileges of the members of the Indian Civil Service in matters of leave, pension and rights as regards disciplinary matters.

29. The twenty-ninth amendment of 1972 amended the Ninth Schedule to the Constitution to include therein two Kerala Acts on Land Reforms.

30. The thirtieth amendment of 1972 curtailed the number of appeals to the Supreme Court by changing the basis of appeal from the valuation test as provided earlier, and provided that an appeal can be made to the Supreme Court in civil proceedings only when such cases involve a substantial question of law.

31. The thirty-first amendment of 1973 increased the upper limit for representation of the States in the Lok Sabha from 500 to 525 and decreased the limit for Union Territories from 25 to 20, thus increasing the elective strength of Lok Sabha from 525 to 545.

32. The thirty-second amendment of 1973 implemented the 6-point programme for Andhra Pradesh. It provided for equal opportunities to different areas of the State of Andhra Pradesh and for the Constitution of an Administrative Tribunal with jurisdiction to deal with grievances relating to public services. Parliament was empowered to legislate for the establishment of a Central University in Andhra Pradesh.

33. The thirty-third amendment of 1974 invalidates the acceptance of resignations by the members of Parliament and the State Legislatures, which are made under duress or coercion or any other kind of involuntary resignation.

34. The thirty-fourth amendment of 1974 provided constitutional protection to 20 Acts passed by the various States, as land reforms, by including them in the Ninth Schedule to the Constitution. The total number of Acts, now included in the Ninth Schedule, is 202.

35. The thirty-fifth amendment of 1974 conferred on Sikkim the status of an associate State of the Indian Union.

36. The thirty-sixth amendment of 1975 made Sikkim the 22nd State of the Indian Union and abolished the institution of Chogyal.

37. The thirty-seventh amendment of 1975 provided for Legislative Assembly and a Council of Ministers for the Union Territory of Arunachal Pradesh.

38. The thirty-eighth amendment of 1975 made President's 'satisfaction' in declaring emergency, President's power to promulgate ordinances during recess of Parliament and Governor's power to promulgate ordinances during recess of legislature non-justiciable.

39. The thirty-ninth Constitution (Amendment) Bill 1975 passed by Parliament on August 8, 1975 sets up a new forum for dealing with the election disputes relating to the President, the Vice-President, the Prime Minister and the Speaker. Hitherto, election matters, concerning these high dignitaries were within the purview of the High Courts and Supreme Court.

The 39th amendment was undone by the Lok Sabha on June 18, 1977 when it passed the Bill seeking to restore in the Supreme Court the power to decide doubts and disputes relating to Presidential and Vice-Presidential elections.

40. The fortieth amendment of 1976 protected 64 Central and State laws in the Ninth Schedule from litigation and redefined the country's sovereign jurisdiction over its territorial waters, the continental shelf and the exclusive economic zone of India. It also provided that the limits of the territorial waters, the continental shelf, the exclusive economic zone and the maritime zones of India shall be specified from time to time by or under any law made by Parliament.

41. The forty-first amendment of 1976 raised the retirement age of the chairman and members of the State Public Service Commissions from 60 to 62.

42. The forty-second amendment of 1976 provided for the supremacy of Parliament and gave primacy to the Directive Principles over Fundamental Rights. Life of the Lok Sabha and Legislative Assemblies was raised to six years. It was provided that no constitutional amendment can be challenged in any court of law. For the first time a set of ten Fundamental Duties for the citizens was enumerated.

The life of Lok Sabha and Legislative Assemblies was restored to five years by the forty-fourth amendment bill passed in 1978.

43. The forty-third amendment of 1977, among other things, restored to the High Courts and to Supreme Court their jurisdiction to consider the constitutional validity of any Central or State law.

It also repealed the articles empowering the Parliament to make laws to deal with anti-national activities and associations.

44. The forty-fourth amendment of 1978 limited the powers of the Government to proclaim internal emergency and corrected some distortions which crept into the Constitution during emergency.

The right to property was omitted as a Fundamental Right and it was made only as a legal right. Article 352 of the Constitution was amended to provide "armed rebellion" as one of the circumstances for the declaration of emergency. Internal disturbance not amounting to armed rebellion would not be a ground for the issuance of a proclamation. The right to personal liberty as contained in the Articles 21 and 22 was further strengthened by the provision that a law for preventive detention cannot authorise, in any case, detention for a longer period than two months unless an Advisory Board has reported that there is sufficient cause for such detention. Some other amendments were also made by the Act mainly for removing or correcting the distortions which came into the Constitution by reason of the amendments initiated during the period of internal emergency.

45. The forty-fifth amendment of 1980 extended the reservation of seats for Scheduled Castes and Scheduled Tribes and the representation of the Anglo-Indians in the Lok Sabha and the State Assemblies for 10 years, i.e., up to January 25, 1990.

46. The forty-sixth amendment of 1982 enabled the State Governments to plug loopholes and realise sales tax dues and also brought about some uniformity in tax rates. Parliament was empowered to specify restrictions and conditions in regard to the system of levy, rates and other incidence of tax on the transfer of goods involved in the execution of a works contract, on the delivery of the goods on hire-purchase or any system of payments by instalments, etc.

47. The forty-seventh amendment of 1984 has certain land reform Acts in the Ninth Schedule to the Constitution with a view to obviating the scope of litigation hampering the implementation process of those Acts.

48. The forty-eighth amendment of 1984 has made inapplicable the conditions mentioned in clause (5) of Article 356 in the case of the State of Punjab. Article 356 of the Constitution lays down that President's rule in a State cannot be continued in force for more than one year unless the special conditions mentioned in clause (5) of the said article are satisfied.

49. The forty-ninth amendment of 1984 has enabled the provisions of the Sixth Schedule to the Constitution to be made applicable to the tribal areas of the State of Tripura. This amendment is intended to give a constitutional security to the Autonomous District Council functioning in the State.

50. The fiftieth amendment of 1984 has brought within the ambit of Article 33 of the Constitution the members of the intelligence forces and persons employed in telecommunications systems set up for the purposes of a force. Article 33 of the Constitution empowers Parliament to enact laws determining to what extent any of the rights conferred by Part III of the Constitution could be restricted or abrogated in application to the members of the armed forces to ensure proper discharge of their duties.

51. The fifty-first amendment of 1984 provides for reservation of seats for tribesmen of the north-eastern states of Meghalaya, Nagaland, Arunachal Pradesh and Mizoram in the Lok Sabha and in the State Assemblies in Nagaland and Meghalaya to meet the aspirations of the local tribal population.

52. The fifty-second amendment of 1985 has banned floor crossing by members elected on a party ticket to the legislative bodies. It provides that a member of Parliament or a State Legislature who defects or is expelled from the party which set him up as a candidate in the election or if an independent member of the House joins a political party after expiry of six months from the date on which he takes seat in the House shall be disqualified to remain a member of the House. The amendment also makes suitable provisions with respect to splits in, and merger of political parties.

53. The fifty-third amendment of 1986 confers full statehood on Mizoram and provides that acts of Parliament will not apply to the new State of Mizoram unless so decided by the Mizoram legislature. If these concern religious or social practices, customary laws, administration of civil and criminal justice, and ownership and transfer of land. It has also provided that the Legislative Assembly of the new State will have not less than 40 members.

54. The fifty-fourth amendment of 1986 has enhanced the salaries of Judges of Supreme Court and High Courts. The increase in salaries is from Rs. 5,000 to Rs. 10,000 for Chief Justice of India, from Rs. 4,000 to Rs. 9,000 for Chief Justice of High Courts and Judges of Supreme Court, and from Rs. 3,500 to Rs. 8,000 for Judges of High Courts.

55. The fifty-fifth amendment of 1986 conferred full statehood on the erstwhile Union Territory of Arunachal Pradesh.

56. The fifty-sixth amendment of 1987 made special provision in the Constitution for the setting up of the State of Goa comprising the Goa district of the Union Territory of Goa, Daman and Diu. Consequently, Daman and Diu have been separated from Goa to form a Union Territory.

57. The fifty-seventh amendment of 1987 provides for making special arrangements with regard to reservation for Scheduled Tribes in the north-eastern States of Arunachal Pradesh, Nagaland, Mizoram and Meghalaya, by amending Article 332 of the Constitution for making a temporary provision, until readjustment of seats on the basis of the first Census after 2000 AD.

58. The fifty-eighth amendment of 1987 authorised the President to publish an authoritative Hindi translation of the Constitution of India.

59. The fifty-ninth amendment of 1988 arms the Government with powers to impose emergency in Punjab on the ground of internal disturbance.

This amendment has been scrapped by 63rd amendment.

60. The sixtieth amendment of 1988 empowers the State Governments to increase the ceiling of professional tax from Rs. 250 to Rs. 2,500 per person per year.

61. The sixty-first amendment of 1988 has lowered the voting age from 21 years to 18 years for the Lok Sabha and Assembly elections.

62. The sixty-second amendment of 1989 has extended the reservation in the Lok Sabha and State Assemblies for a further period of 10 years for Scheduled Castes and Scheduled Tribes. It has also ensured representation of the Anglo-Indian community in the legislature by nomination.

63. The sixty-third amendment of 1989 has scrapped the 59th amendment which empowered the Government to impose emergency in Punjab.

64. The sixty-fourth amendment of 1990 has provided that in respect of the State of Punjab the proclamation imposing President's rule shall remain in force for not more than three years and six months.

65. The sixty-fifth amendment of 1990 has given statutory status to the National Commission for Scheduled Castes and Scheduled Tribes which shall consist of a Chairperson, Vice-Chairperson and five other Members to be appointed by the President. The Commission has been given wide powers to go into the cases of injustice and atrocities on the Scheduled Castes and Scheduled Tribes.

66. The sixty-sixth amendment of 1990 has added a number of land reform laws in the Ninth Schedule of the Constitution and thus placed them outside the jurisdiction of the courts.

67. The sixty-seventh amendment of 1990 has provided that in respect of the State of Punjab the proclamation imposing President's rule shall remain in force for not more than four years.

68. The sixty-eighth amendment of 1991 has provided that in respect of the State of Punjab the proclamation imposing President's rule shall remain in force for not more than five years.

69. The sixty-ninth amendment of 1991 provides that the Union Territory of Delhi shall be called the National Capital Territory of Delhi to be administered by the Lieutenant Governor. It shall have a Legislative Assembly and the seats of the Assembly shall be filled by members chosen by direct election from the territorial constituencies in the National Capital Territory and shall also have a Council of Ministers consisting of not more than ten per cent of the total number of members in the Assembly with the Chief Minister as its head.

70. The seventeenth amendment of 1992 provides that in articles 54 and 55, "State" shall include the National Capital Territory of Delhi and the Union Territory of Pondicherry.

71. The seventy-first amendment of 1992 provides that the Konkani, Manipuri and Nepali shall be included in the Eighth Schedule.

72. The seventy-second amendment of 1992 provides for the quantum of seats reserved for the Scheduled Tribes in the Tripura Legislative Assembly.

73. The seventy-third amendment of 1992 adds Part IX to the Constitution and provides for the Panchayats in every State at the village, intermediate and district levels and their composition, reservation of seats for women, Scheduled Castes and Scheduled Tribes in

them, duration of Panchayats, conditions for disqualification for membership, powers, authority and responsibilities of Panchayats, etc. It also adds, after the Tenth Schedule, the Eleventh Schedule to the Constitution.

74. The seventy-fourth amendment of 1992 adds Part IX A to the Constitution which lays down the procedure for constitution and composition of Municipalities & Ward Committees. It also provides for the reservation of seats for women, Scheduled Castes and Scheduled Tribes in the Municipalities. It also adds, after the Eleventh Schedule, the Twelfth Schedule to the Constitution.

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The parliamentary system of government, both at the Centre and in the States in India, is based on adult franchise whereby all citizens of India who are not less than 18 years of age and are not disqualified under the Constitution or any law made by the appropriate legislature on certain grounds like non-residence, unsoundness of mind, crime, illegal or corrupt practices, have the right to be registered as voters in any election to the Lok Sabha and Legislative Assemblies of the States.

15. Political Parties and General Elections

Political Parties: Since there exists no law at present regarding the formation and functioning of political parties in India, the Election Commission has evolved its own procedure for recognition of political parties for the limited purpose of regulating the allotment of exclusive election symbols to those which are so recognised. According to the Election Symbols (Reservation and Allotment) Order, 1968, "A political party shall be treated as a recognised political party in a State" if, and only if, either of the conditions specified in clause (A)

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(a) has been engaged in political activity for a continuous period of five years; and

(b) has, at the general election in that State to the House of the People or, as the case may be, to the Legislative Assembly, for the time being in existence and functioning, returned either (i) at least one member to the House of the

People for every twenty-five members of that House or any fraction of that number elected from that State, or (ii) at least one member to the Legislative Assembly of that State for every thirty members of that Assembly or any fraction of that number;

(B) that the total number of valid votes polled by all the contesting candidates set up by such party at the general election in the State to the House of the People or, as the case may be, to the Legislative Assembly, for the time being in existence and functioning (excluding the valid votes of each such contesting candidates in a constituency as has not been elected and has not polled at least one-twelfth of the total number of valid votes polled by all the contesting candidates in that constituency) is not less than four per cent of the total number of valid votes polled by all the contesting candidates at such general election in the State (including the valid votes of those contesting candidates who have forfeited their deposits).

National and State Parties: The list of recognised parties is revised after every general election by the Election Commission in the light of the criterion laid down by it. A political party recognised by the Election Commission enjoys the status of a national party, if it is a recognised party in four or more States. Among the major national parties are Indian National Congress, Janata Dal, Bharatiya Janata Party, Communist Party of India, Communist Party of India (Marxist) and Samajwadi Janata Party.

A political party which is a recognised party in less than four States is deemed as a State party. Among the important State parties are: All India Anna Dravida Munnetra Kazhagam, All India Forward Bloc, All India Muslim League, All Parties Hill Leaders' Conference, Asom Gana Parishad, Bahujan Samaj Party, Dravida Munnetra Kazhagam, Jammu and Kashmir National Conference, Kerala Congress, Maharashtra Gomantak Party, Manipur Peoples' Party, Mizo National Front, Muslim League, Peasants and Workers Party of India, Revolutionary Socialist Party, Shiromani Akali Dal, Tamil Nadu Congress and Telugu Desam Party.

General Elections: The first general elections in India were held in 1952. The elections were held simultaneously to the Lok Sabha and the State Legislative Assemblies. The second general elections were held in 1957, the third and the fourth general elections were held in 1962 and 1967 respectively. The fifth general elections in 1971 were a mid-term election as the Lok Sabha was dissolved a year and two months before the expiry of its full term. Consequent to the imposition of internal emergency in June 1975, the term of

the Lok Sabha was extended to six years. After lifting of the emergency, the sixth general elections were held in March 1977 which brought Janata Party Government to the Centre, thus, for the first time, routing Indian National Congress at the polls and throwing it out of power. Within three years, the seventh general elections were held in January 1980 which brought the Congress back to power under Mrs. Indira Gandhi. After the assassination of Mrs. Indira Gandhi, the eighth general elections were held in December 1984 wherein Congress (I) under Mr. Rajiv Gandhi was returned to power with 415 seats in the eighth Lok Sabha.

The elections to ninth Lok Sabha held in November 1989, marked a watershed in national politics as for the first time since independence, a 'Hung Parliament' was thrown in with no party or a group getting a clear majority. With the elections held for 525 seats, the Congress (I) under Mr. Rajiv Gandhi, got the largest number of 193 seats, followed by the Janata Dal with 141 seats and BJP with 88 seats. The five-party National Front, comprising Janata Dal, Congress (S) and three regional parties, viz., Telugu Desam, DMK and AGP, formed the Government headed by Mr. V.P. Singh with the outside support extended by the BJP and the Left parties.

The BJP withdrew its support to the National Front Government which was defeated after 11 months of existence by an overwhelming majority in the Lok Sabha on November 7, 1990 as the Congress (I) announced that it would vote against the Government if Mr. V. P. Singh were to remain the leader. Mr. V.P. Singh submitted the resignation of his Cabinet to the President on November 9, 1990. The Mandal Commission and the Ayodhya issue proved the undoing of the National Front Government.

Mr. Chandra Shekhar, leader of the breakaway Samajwadi Janata Dal comprising of 61 members, was on November 11, 1990 sworn in as the eighth Prime Minister. His Government could not last long and had to resign after the majority party, the Congress (I) and its allies with whose strength it won the vote of confidence, withdrew the support.

The ninth Lok Sabha was dissolved by the President and fresh elections ordered. It had the shortest of the tenures—just 15 months—and witnessed the most tumultuous and unusual events in the parliamentary history of India.

Fresh elections were held in May-June 1991 in two stages and the tenth Lok Sabha was constituted on June 20, 1991 and the picture as it emerged was that of a 'hung' Lok Sabha for the second time in quick succession. No single party could secure an absolute majority in the elections.

The Congress (I), which emerged as the single largest party, capturing 220 seats out of 511 for which elections were held out of the effective strength of 543 members formed the Government under the leadership of Mr. P. V. Narasimha Rao, the President of Congress (I). In the elections, the BJP emerged as the second largest party and succeeded in pushing the ruling party of the 1989, the Janata Dal, to a poor third position. The Janata Dal was fragmented in 1994.

The eleventh Lok Sabha was constituted on May 15, 1996 after the general election to the Lok Sabha in which 590 million voters went to the polls to elect 543 members. Elections were also simultaneously held for the five State Assemblies of West Bengal, Kerala, Haryana, Assam and Tamil Nadu and the Union territory of Pondichery. The three phased nationwide elections threw up a severely fractured verdict as forecast by pollsters and political watchers alike, with none of the three major formations the Congress I, the Bhartiya Janata Party and the National Front-Left Front Combine—any where near the striking distance of an absolute majority.

With the available verdict a 21 member five party coalition government of the United Front, headed by Mr. H.D. Deve Gowda was sworn in New Delhi on June 1, 1996 replacing Mr. Atal Behari Vajpayee who could not muster the required strength to prove the majority and resigned before facing the Lok Sabha.

Deve Gowda's ministry was voted out of office on April 11, 1997 and Mr. Inder Kumar Gujral who held the portfolio of Foreign Minister in the outgoing government was appointed as the new Prime Minister of India on April 20.

12th Lok Sabha: Following the resignation of PM Gujral in the wake of withdrawal of Congress support, the 11th Lok Sabha was dissolved and the process of a 4-phase election schedule w.e.f. 6th February, 1998 for 12th Lok Sabha was

announced. Simultaneously elections to the State Assemblies of Nagaland, Meghalaya, Tripura, Gujarat and Himachal Pradesh were also announced wherein BJP emerged as ruling party in Gujarat & Himachal Pradesh, the Congress in Nagaland & Meghalaya and CPT (M) in Tripura. But the 12th Lok Sabha, like its predecessor, was again a hung Parliament. The BJP, however, emerged as the single largest party winning 178 seats which together with the strength of its allies (73) totalled 251 while Congress tally was 140 plus 26 (allies). The United Front could manage to secure only 96 seats in which the CPT (M) - 32 and Samajwadi Party - 21 were the main contributors. Others and independent got only 21 seats. In such a scenario, President K.R. Narayanan decided to invite Shri Atal Behari Vajpayee, the leader of single largest party to form the Government. Vajpayee took oath of office on March 19, 1998 and proved his majority in the House a week or so later. After 8-months of rule, the BJP-led front is under pressure to resign following BJP's debacle in the recent Assembly polls in Delhi, Rajasthan & Madhya Pradesh (November 25, 1998).

13th Lok Sabha: Following the fall of BJP-led Government by just one-vote in the wake of withdrawal of support by AIMMK on April 17, 1999, 12th Lok Sabha was dissolved (April 26) and fresh (five-phased) elections were announced for the 13th Lok Sabha and State Assemblies of Karnataka, Maharashtra, Arunachal Pradesh, Sikkim and Andhra Pradesh (May 4). In the run-up to elections 99, the NDA emerged the biggest group with 304 seats in its kitty and Mr. Atal Behari Vajpayee was administered the Oath of office as PM, along with his 70-member Ministry by President K.R. Narayanan on October 13, 1999. The Congress tally (112) was lowest since 1952, when first General Elections of free India were held.

16. States and Union Territories

The Republic of India comprises of 25 States and 6 Union Territories which are administered by the Centre and National Capital Territory of Delhi.

The Governor of a State is the chief executive of the State who acts on the aid and advice of the Council of Ministers with the Chief Minister at its head, except in so far as by or under the constitution required to exercise his functions or any of them in his discretion.

The Union Territories are administered by the President, acting, to such extent as he thinks fit, through an administrator appointed by him. The administrators of Delhi, Daman and Diu and Pondicherry are designated as Lt.-Governors, while the administrators of Andaman and Nicobar Islands and Chandigarh are designated as Chief Commissioners. The Governor of Goa at present administers Daman and Diu as well as Dadra and Nagar Haveli. Lakshadweep has a separate administrator.

STATES

ANDHRA PRADESH

Area : 2,75,068, sq km
Population (1991 census): 66,508,008 growth rate (1981-91): 24.20%

Density per sq km : 242

Sex ratio (females per 1,000 males): 972

Literacy rate: 44.09% (males:55.13%; females: 32.72%)

Capital : Hyderabad

No. of Districts : 23

Legislature : Unicameral

Principal Languages : Telugu and Urdu.

Important Cities, Towns and Religious/Tourist

Places : Adilabad, Anantpur, Adoni, Bheemavaram, Chittoor, Cuddapah, Eluru, Guntur, Hyderabad (*Birla Mandir, Charminar [majestic four minaret monument built in 1591 AD], Salarjung Museum, Golconda Fort [once the legendary fort, the capital of Qutub Shahi kings who ruled the surrounding territories from 1518 to 1687 AD], Mecca Masjid [started in 1687 AD by Abdullah Qutub Shah and completed by Aurangzeb when he annexed Golconda kingdom], Naubat Pahad [two hillocks; one is the site of hanging garden and the other marble temple of Lord Sri Venkateswara], Nehru Zoological Park, Qsmansagar [beautiful lake formed by damming the river Musi], Hussainsagar Lake [separating Hyderabad and Secunderabad cities; a giant statue of Lord Gautama Buddha of a height of 60 feet is erected on the Gibraltar rock here], Tombs of Qutab Shahi Kings), Kakinada, Karimnagar, Khammam, Kurnool, Machilipatnam, Mahabubnagar, Nagarjunakonda (*Buddha Stupa*), Nagarjuna Sagar, Nalgonda, Nellore, Nizamabad, Ongole, Proddaturam Puttaparthi (*Ashram of Sri Satya Sai Baba*), Rajahmundry, Sangareddy, Snkakulam, Tenali, Tirupati (*the holiest Hindu place of South India known for Lord Sri Venkateswara Temple located on a hillock which typifies the early Dravidian architecture*), Vijayawada, Visakhapatnam, Vizianagaram, Waltair, Warangal (*Fort, Chalukyan Temples*), Yadagirigutta (*Sri Lakshminarasimha Swamy Temple*).*

Judicature : High Court at Hyderabad.

Location : Located in South India, Andhra Pradesh is bounded south by Tamil Nadu, west by Karnataka, north and north-west by Maharashtra, north-east by Madhya Pradesh and Orissa, east by the Bay of Bengal.

History : Andhra Pradesh was constituted as a separate State on October 1, 1953 on the partition of Madras and consisted of the undisputed Telugu-speaking area of that State. To

this region was added on November 1, 1956 the Telangana area of the former Hyderabad State comprising the districts of Hyderabad, Medak, Nizamabad, Karimnagar, Warangal, Khammam, Nalgonda and Mahabubnagar, parts of the Adilabad district, and some taluqs of the Raichur, Gulbarga and Bidar districts, and some revenue circles of the Nanded district. On April 1, 1960, 573.43 sq km (221.4 sq miles) in the Chingleput and Salar districts of Madras were transferred to Andhra Pradesh in exchange for 1,062 sq km (410 sq miles) from Chittoor district. The district of Prakasam was formed on February 2, 1970. Hyderabad was split into two districts on August 15, 1978. A new district, Vizianagaram, was formed in 1979.

Economy : For about 70 per cent of the people of Andhra Pradesh, agriculture is the main occupation. About 40 per cent of the cultivated area is irrigated. Important crops of the State are rice, jowar, bajra, maize, ragi, small millets, pulses, tobacco, cotton, sugarcane, groundnut and bananas. The State is surplus in respect of rice. The State accounts for about 55 per cent of the country's entire production of castor and 94 per cent of the Virginia tobacco. Forests cover about 23 per cent of State's area. Important forest products are teak and other country woods, eucalyptus, cashew, casuarina, bamboo, son wood, etc.

Andhra Pradesh has a virtual monopoly of quality 'Chrysotile asbestos' in the country. It accounts for about 98 per cent of India's total production of barytes. Other important minerals found in the State are copper ore, manganese ore, mica, coal and limestone. In respect of manganese ore production, the State ranks sixth in the country. It also ranks second in respect of mica and limestone production. The famous Singareni coal mines are located in Andhra Pradesh which supply coal to the entire south.

Hyderabad and Visakhapatnam are the main centres of several major industries. They are known for the production of machine tools, synthetic drugs, pharmaceuticals, heavy electric machinery, ships, fertilisers, electronic equipment, aeronautical parts, cement, chemicals, asbestos cement products and glass.

Important power projects are : Machkund, Upper Sileru, Lower Sileru, Tungabhadra Dam, Nagarjuna Sagar, Srisaillam and Nizamsagar hydel power Schemes and Nellore, Ramagundam, Kothagudem and Vijayawada thermal stations.

Visakhapatnam is the major port while Kakinada, Machilipatnam, Bheemunipatnam, Krishnapatnam, Vadarvu and Kalingapatnam are the minor ports.

Important airports are Hyderabad, Tirupati, Vijayawada and Visakhapatnam.

ARUNACHAL PRADESH

Area : 83,743 sq km

Population (1991 census): 864,558; growth rate (1981-91): 36.83%

Density per sq km : 10

Sex ratio (females per 1,000 males): 859

Literacy rate: 41.59% (males: 51.45%; females: 29.69%)

Capital : Itanagar

No. of Districts : 13

Legislature : Unicameral

Principal Languages : Nishi, Dala, Miji, Adi Gailong, Wancho, Tagin Hill Miji, Mishmi, Monpa, Nocte, Aka, Tangsa and Khampui.

Important Cities, Towns and Religious/Tourist Places : Along, Anini, Bhismaknagar (archaeological sites), Bomdila, Changlong, Daporijo, Itanagar (with excavated ruins of historical Ita Fort and attractive Ganga Lake), Khonsa, Pasighat, Seppa, Malinithan (archaeological sites), Nandapha (wildlife sanctuary in Changlang district), Pareaswaramkund (place of pilgrimage), Tawang (and nearby largest Buddhist monastery in India), Tezu, Ziro.

Judicature : The State comes under the jurisdiction of Guwahati High Court.

Location : Bounded by Bhutan to the West, China to the north and north-east, Myanmar (Burma) to the east and the plains of Assam to the south, Arunachal Pradesh is the home of more than 20 major tribes and acknowledged to be one of the most splendid, variegated and multilingual tribal areas of the world.

History : Arunachal Pradesh acquired an identity of its own for the first time in 1914, when some tribal areas separated from the then Darrang and Lakhimpur districts of the province of Assam to form the North East Frontier Tract. The North East Frontier Tract was further sub-divided into the Balipara Frontier Tract, Lakhimpur Frontier Tract, Sadiya Frontier Tract and the Tirap Frontier Tract during various stages of evolution between 1914 and 1946. These Frontier Tracts, together with the Naga Tribal Area, were collectively renamed the North East Frontier Agency (NEFA) in 1951.

In 1954, the NEFA was reconstituted into the Kameng Frontier Division, Subansiri Frontier Division, Tirap Frontier Division, Siang Frontier

Division, Lohit Frontier Division and Tuensang Frontier Division. The Tuensang Frontier Division was separated from NEFA in 1957 and merged with the newly constituted Naga Hills-Tuensang Area which now forms the State of Nagaland. Later, five Frontier divisions of the territory became the five original districts.

Arunachal Pradesh acquired an independent political status in 1972, when it was upgraded as Union Territory. The Agency Council, which had been at the apex of the Panchayati Raj system in the territory, was replaced by a Pradesh Council in 1972, which, in turn, was converted into a provisional Legislative Assembly in 1975.

The first general election to the 30-member Arunachal Pradesh Legislative Assembly was held in 1978, constituting a landmark in the political evolution of the Union Territory. The State of Arunachal Pradesh Bill was passed by the Parliament in 1986 and with effect from February 20, 1987, Arunachal Pradesh became the 24th State of the Indian Union.

Economy : For about 35 per cent of the population of Arunachal Pradesh, agriculture is the main occupation. Seventeen per cent of total cultivated area is under irrigation. Rice, maize, millets, pulses, potatoes, wheat and mustard are the important crops. About 62 per cent of the total area of the State is under forests.

The principal industries of the State are forest-based. Besides handloom and handicraft industries, saw mills, plywood and veneering mills, rice mills, fruit preservation units, soap and candle manufacturing, steel fabrication, oil expellers are in the medium and small industrial sectors. The State has reserves of coal and crude oil. Deposits of dolomite ore, limestone, graphite, quartzite, kyanite, mica, iron ore, copper ore have also been reported.

ASSAM

Area : 78,438 sq km

Population (1991 census): 22,414,322, growth rate (1981-91): 24.24%

Density per sq km : 286

Sex ratio (females per 1,000 males): 923

Literacy rate: 53.42% (males: 62.34%; females: 43.70%)

Capital : Dispur

No. of Districts : 23

Legislature : Unicameral

Principal Language : Assamese

Important Cities, Towns and Religious/Tourist Places : Barpeta, Batadrava (with place of great Vishnav Saint Sankardev), Bhalukpong (angling),

Chandubi Lake (*picnic spot*), Dhemajli, Dhubri, Dibrugarh, Diphu, Goalpara, Golaghat, Guwahati (*Aswanklata, [Kamakshya temple on Nilachal Hills]*), Basistha Ashram, Gandhi Mandap, Geeta Mandir, Madan Kamdev Temple, Navagraha [*Temple of Nina Planets*], Saraighat Bridge, State Museum, State Zoo, Sukreswar Temple, Umananda [*Peacock Island*], Haflong (*health resort*), Hajo (*meeting of Buddhism, Hinduism and Islam*), Hallakandi, Jatinga Hills, Jorhat, Karimganj, Kaziranga National Park (*famous for one-horned Great Indian Rhinoceros*), Kokrajhar, Lakhimpur, Majuli (*largest river island in the world*), Manas (*Wild Life Sanctuary*), Mangaldol, Marigaon, Nagaon, Naibari, Pragjyotishpur, Sibsagar (*Shiva temple*), Silchar, Sualkuchi (*famous for silk industry*), Tezpur (*scenic beauty*), Tinsukia.

Location : Located in eastern India, Assam is almost separated from central India by Bangladesh. It is bounded west by West Bengal, north by Bhutan and Arunachal Pradesh, east by Nagaland, Manipur and Burma, south by Meghalaya, Bangladesh, Tripura and Mizoram.

History : Assam first became a British Protectorate at the close of the first Burmese War in 1826. In 1832 Cachar was annexed; in 1835 the Jaintia Hills were included in the East India Company's dominions and in 1839 Assam was annexed to Bengal. In 1874 Assam was detached from Bengal and made a separate chief commissionership. On the partition of Bengal in 1905, it was united to the Eastern Districts of Bengal under a Lt.-Governor. From 1912 the chief commissionership of Assam was revived and in 1921 a governorship was created. On the partition of India almost the whole of predominantly Muslim district of Sylhet was merged with East Bengal (Pakistan, now Bangladesh). Dewangiri in North Kamrup was ceded to Bhutan in 1951. The Naga Hill district, administered by the Union Government since 1957, became part of Nagaland in 1962. The State of Meghalaya within Assam, comprising the districts of Garo Hills and Khasi and Jaintia Hills, came into existence on April 2, 1970 and achieved full statehood in January 1972 when it was decided to form a Union Territory of Mizoram from the Mizo Hill district. Mizoram became a State in 1987.

Economy : About 63 per cent of the State's working force is engaged in agriculture and allied activities. More than 79 per cent of the total cropped area is utilised for food crops production. Rice is the principal food crop. Jute, tea, cotton, oilseeds, sugarcane, potato and fruits are the

main cash crops. Forests account for 22.41 per cent of the total area of the State.

Assam holds a unique position in respect of mineral oil production. Coal, limestone, refractory clay, dolomite and natural gas are the other minerals found in the State.

Tea occupies an important place so far as agriculture-based industries are concerned. Assam has over 800 tea plantations and contributes about one-sixth of the world's entire tea production. A substantial part of the country's total petroleum output and natural gas is found in the State. The State has two oil refineries and the third with a petrochemical complex is being set-up. Besides a public sector fertiliser factory at Namrup, the industries located in the State are sugar, jute, silk, paper, plywood manufacture, rice and oil milling. A polyester spinning mill has also been established at Nathkuchi village of Kamrup district. The major power stations are: Chandrapur Thermal Project, Namrup Thermal Project, Karbi-langpi Hydel-Electric Project and Lakwa Thermal Power Station.

BIHAR

Area : 1,73,877 sq km

Population (1991 census): 86,374,465; growth rate (1981-91): 23.54%

Density per sq km : 497

Sex ratio (females per 1,000 males): 911

Literacy rate: 38.48% (males: 52.49%; females: 22.89%)

Capital : Patna

No. of Districts : 55

Legislature : Bicameral

Principal Language : Hindi

Important Cities, Towns and Religious/Tourist

Places : Arrah, Arrah, Aurangabad, Begusarai, Bettla (*Palamau National Park*), Bettla, Bhagalpur, Bhimbandh (*hot water springs*), Biharsharif, Bodhi Gaya (*most sacred pilgrim place for Buddhists; Mahabodhi Temple; at the foot of the Bodhi tree here, Gautama Buddha attained Mahaparinirvana and became the Enlightened One*), Chapra, Chaibasa, Darbhanga, Deoghar (*Hindu shrines*), Dhanbad, Dumka, Gaya (*centre of pilgrimage for Hindus, Vishnupad Temple built by Queen Ahilya Bai of Indore on the banks of Falgu river, Temple of Sun God*), Gididi, Godda, Gopalganj, Gumla, Hazaribagh (*hill resort, wildlife reserve famous for its National Park*), Hazipur, Hazaribagh, Jahanabad, Jamshedpur (*steel city*), Katihar, Kharagpur, Kishanganj, Lohardaga, Madhepura, Madhubani, Maner (*sacred Muslim shrines of Sufi saint Hazrat Makhdoom Shah*), Motihari, Munger,

Muzaffarpur, Nalanda (*ruins of the world's earliest Buddhist university, Great Stupas lie here, well-known Chinese traveller, Hiuen T'ang studied at the University here in the 7th century*), Nawada, Parasnath (*Jain pilgrimage centre*), Patna (*ancient city of Pataliputra and capital of Ashoka is the present capital of Bihar, City Museum, Gandhi Maidan, Golghar, Kumrahar, Har Mandir (one of the holiest Sikh shrines; built by Ranjit Singh, it marks the place where Gobind Singh, the 10th and the last of the Sikh gurus, was born in 1660)*), Pawapuri (*where Lord Mahavir breathed his last*), Purnia, Rajgir (*pilgrim centre; Gautama Buddha preached here and so did Mahavira, the great preceptor of the Jains; was the capital of King Bimbisara in ancient times*), Ranchi (*hill resort, waterfalls and scenic beauty*), Raxaul, Saharsa, Sahibganj, Samastipur, Sasaram (*tomb of Sher Shah Suri*), Singhbhum, Sitamarhi, Siwan, Sonapur, Topchanchi (*scenic value*), Vaishali (*seat of the first Republic of the world in sixth century BC, birthplace of Mahavira, one of the Jain thirthankars*), Vikramshila (*ruins of another Buddhist university*).

Judicature : High Court at Patna with a bench at Ranchi.

Location : Located in north India, Bihar is bounded north by Nepal, east by West Bengal, south by Orissa, south-west by Madhya Pradesh and west by Uttar Pradesh.

History : The State contains the ethnic areas of North Bihar, Santhalpargana and Chhotanagpur. In 1956 certain areas of Purnea and Manbhum districts were transferred to West Bengal.

Known in ancient days as Magadha, Bihar was the home state of the Mauryan emperors. Under Ashoka the Great, Magadha and its capital Pataliputra had become famous all over the world. With the decline of Mughal empire, Bihar had passed into the hands of the Nawabs of Bengal. The British had wrested territory from the Nawabs of Bengal following the battle at Buxar (Bihar) in 1764. Under the British, Bihar was a part of Bengal Presidency. In 1911, Bihar along with Orissa was separated from Presidency of Bengal. In 1936, Bihar and Orissa became separate provinces.

Economy : About 35 per cent of the cultivable area of Bihar is under irrigation. Rice, wheat, maize, ragi and pulses are the principal food crops, while sugarcane, oilseeds, tobacco, potato and jute are the main cash crops of the State. Forests cover about 17 per cent of the area.

With about 40 per cent of the total mineral production in the country, Bihar is one of the

richest States in India in mineral wealth. Huge deposits of copper, apatite and kyanite and sizeable deposits of coal, mica and china clay are available in the State. It is also one of the principal iron ore producing States. Other minerals found are manganese, limestone, graphite, asbestos, barytes, dolomite, felspar, columbite, pyrites, saltpetre, glass sands, slate, lead, silver, building stones and radioactive minerals.

Bihar is also famous for production of tussar which employs more than one lakh persons. Cottage Industries comprise of handicrafts. Madhubani paintings are known the world over.

The major power projects are: Patratu Thermal Power Station, Barauni Thermal Power Station, Muzaffarpur Thermal Power Station, Subamarekha Hydel Power Station, Kosi Hydel Power Station Bokaro, Chandrapura and Durgapur Thermal Power Stations, Tilaiya, Maithon and Panchet Hydel Power Stations.

Patna, Ranchi, Jamshedpur and Gaya have airports.

GOA

Area : 3,702 sq km

Population (1991 census): 1,169,793; growth rate: (1981-91): 16.08%

Density per sq km : 316

Sex ratio (females per 1,000 males): 967

Literacy rate: 75.51% (males: 83.64%; females: 67.09%)

Capital : Panaji

No. of Districts : 2

Legislature : Unicameral

Principal Languages : Marathi and Konkani

Important Cities, Towns and Religious/Tourist Places : Aguda, Anjuna and Miramar (*loveliest beaches*), Baga, Benaulim, Bondia, Calangute, Chapora and Cabo de Rama Forts, Chorao (*Dr. Salim Ali bird sanctuary*), Coligao and Molen (*wildlife sanctuaries*), Colva, Dabolim, Dauna, Dudhsagar and Harvailem (*waterfalls*), Hamai, Kavalem, Margol, Old Goa (*Basilica of Bom Jesus and St. Cathedral churches, Viceroy's Arch, Gate of Adil Shah's Palace*), Mangueshi and Bandora temples, Margao, Marmugao, Mayem (*lake resort*), Panaji, Terekhol, Vasco da Gama, Vagator.

Judicature : The State comes under the jurisdiction of Bombay High Court. A new District Court, South Goa, has been constituted. A bench of Bombay High Court in Goa has been set up at Panaji.

Location : Goa is bounded on the north by Maharashtra and on the east and south by Karnataka and has a coastline of

History : The coast was captured for Portugal by Alfonso de Albuquerque in 1510 and the island area was added in the 18th century. Daman (Damao) on the Gujarat coast, 112 km (70 miles) north of Bombay, was seized by the Portuguese in 1531 and ceded to them in 1539 by the Shah of Gujarat. The island of Diu, captured in 1534, lies off the south-east coast of Kathiawar (Gujarat). After 451 years of colonial rule, Goa was liberated from Portuguese yoke on December 9, 1961 and the territories were occupied by India and incorporated into the Indian Union.

The Indian Parliament passed legislation in March 1962 by which Goa, Daman and Diu became a Union Territory with retrospective effect from December 20, 1961. The Goans' dream of autonomy was fulfilled when the Union Territory became the 25th State in the country on May 30, 1987. The overland districts of Daman and Diu were de-linked from Goa and are now a Union Territory.

The important rivers of Goa are Mandovi, Zuari, Tiracol, Chapora and Betul which are navigable for a total length of 256 km.

Economy : About 8.79 per cent of the total cultivated area is under irrigation. Rice is the principal food crop. Pulses and ragi are also grown. Groundnut, maize, jowar and bajra are grown in small quantities. The important cash crops are sugarcane, coconut, cashewnut, arecanut and fruits like pineapple, mango and banana. Forests cover about 29 per cent of the total area of the State.

Iron ore, manganese, ferro-manganese, bauxite and silica sand are the minerals found in Goa. Mining industry is very important for the economy of the State. The small scale industries include bakeries, printing presses, saw mills, tyre retreading units, fruit and fish canning, cashewnut processing, mosaic tiles, soap manufacture, furniture, typewriter ribbons, carbon paper, automobile batteries, acrylic sheet, polythene bags, sodium silicate, fishing nets, zip fasteners, stoves, footwear, spectacle frames, chemicals, stainless steel wares, etc.

Panaji and Mormugao are the two main ports, while Dabolim is the only airport in the State.

GUJARAT

Area : 1,96,024 sq km

Population (1991 census): 41,309,582; growth rate (1981-91): 21.19%

Density per sq km : 211

Sex ratio (females per 1,000 males): 934

Literacy rate: 61.29% (males: 73.13%; females: 48.64%)

Capital : Gandhinagar

No. of Districts : 19

Legislature : Unicameral

Principal Language : Gujarati

Important Cities, Towns and Religious/Tourist

Places : Ambaji (*religious place*), Ahmedabad—situated on the river Sabarmati (*Jami Masjid, Teen Darwaza, Bhadra Fort, Tomb of Ahmed Shah Abdali, Shaking Minarets, Hatheer Singh Temple, Kankaria Lake, Sabarmati Ashram*); Amreli, Banaskantha, Bharuch (Broach), Bhadrashwar (*religious place*), Bhavnagar, Bhuj, Cambay (*old sea port of Ahmedabad*), Dang, Dwarka (*Hindu religious place and closely related to Krishna*), Girnar (*religious place*); Gandhinagar (*the capital city*), Godhra, Himatnagar, Jamnagar (*princely state of Jadeja Rajputs prior to independence*), Junagadh (*temple-studded Girnar Hill, departure point for visit to Gir Forest, Uparkot Fort, Mahabat Maqbara*), Karwar (port and beach), Kheda, Kutch, Lothal (*related to Indus Valley sites of Mohenjodaro and Harappa (both in Pakistan)*), Mehsana, Modhara (*Sun Temple built by King Bhimdev I*), Panchmahals, Palanpur, Palitana (*religious place*), Patan (*ancient Hindi capital before being sacked by Mahmud of Ghazni*), Pavagadh (*religious place*), Porbandar (*birth place of Mahatma Gandhi*), Rajkot (*once capital of Saurashtra*), Sasan (*Gir Lion Sanctuary*), Sabarkantha, Satpura (*hill station*), Shamlaji (*religious place*), Somnath (*religious place, famous for Somnath Temple built of gold by Somraj, the Moon God himself, also associated with Rawana, Krishna, Bhimdev, Mahmud of Ghazni was an unwelcome visitor who descended from his Afghan kingdom and looted the fabulous wealth and destroyed the temple*), Surat (*on the banks of river Tapi*), Surendranagar, Taranga (*religious place*), Vadodara (Baroda) (*former capital of princely Gaekwad state, Sayaji Bagh, Baroda Museum, Maharaja Fatehsinh Museum, Laxmi Vilas Palace*), Valsad, Veraval (*was major seaport for Mecca pilgrims*).

Judicature : High Court at Ahmedabad

Location : Located in western India, Gujarat is bounded north by Pakistan and Rajasthan, east by Madhya Pradesh, south-east by Maharashtra, south and west by the Arabian Sea.

History : On May 1, 1960, as a result of the Bombay Reorganisation Act, 1960, the State of Gujarat was formed from the north and west (predominantly Gujarati-speaking) portion of Bombay State, the remainder being renamed the State of Maharashtra. Gujarat consists of the following

districts of the former State of Bombay : Banaskantha, Mehsana, Sabarkantha, Ahmedabad, Kheda, Panch Mahals, Vadodara, Bharuch, Surat, Dangs, Amreli, Surendranagar, Rajkot, Jamnagar, Junagarh, Bhavnagar, Kachch, Gandhinagar and Valsad.

Economy : About 21 per cent of the total cultivated area and 20 per cent of the total sown area in Gujarat is under Irrigation. Bajra, jowar, maize, rice and wheat are the main food crops. Cotton, tobacco and groundnut are the important commercial crops. Gujarat tops in the country in respect of production of tobacco, cotton and groundnut. Other cash crops are Isabgol, cumint, sugarcane, mangoes and bananas. Forests cover 10 per cent of the area of the State.

Gujarat is recognised as one of the leading industrialised States in the country. The important industries of Gujarat are textiles, inorganic chemicals such as caustic soda and soda ash, petro-chemicals, drugs and pharmaceuticals, electronic and electrical goods, machine tools, cement, sugar, oil and natural gas.

The Sardar Sarovar Namada Project is the ultimate irrigation potential.

The main airport of Gujarat is Ahmedabad which has got the status of an international airport. Besides 40 ports, Kandla is the major port which occupies a leading position in the country.

HARYANA

Area : 44,212 sq km

Population (1991 census): 16,463,648; growth rate (1981-91): 27.41%

Density per sq km : 372

Sex ratio (females per 1,000 males): 865

Literacy rate: 55.85% (males: 69.10%; females: 40.47%)

Capital : Chandigarh

No. of Districts : 19

Legislature : Unicameral

Principal Language : Hindi

Important Cities, Towns and Religious/Tourist

Places : The major cities/towns are : Ambala, Bhiwani, Faridabad, Gurgaon, Hissar, Jind, Kailthal, Karnal, Kurukshetra, Mahendragarh, Narnaul, Panipat, Rewari, Rohtak, Sirsa, Sonapat.

There are 42 tourist complexes in Haryana, majority of them named after birds. Some of the tourist complexes are : Badkhal Lake, Dabchick (Hodal), Jungle Babbler (Dharuhera), Karna Lake (Uchana), Kela Teetar (Abubshahr), Kingfisher (Ambala), Parakeet (Pipli-Kurukshetra), Magpie (Faridabad), Rajhans (Surajkund), Rosy Pelican (Sultanpur), Skylark (Panipat), Sohna, Sultanpur

Bird Sanctuary (Sultanpur), Surajkund, Uchana (Kamal), Yaduvindra Garden (Pinjora).

Judicature : Shares the High Court of Punjab and Haryana at Chandigarh.

Location : Located in north India, Haryana is bounded north by Himachal Pradesh, east by Uttar Pradesh, south and west by Rajasthan and north-west by Punjab. Delhi forms an enclave on its eastern boundary.

History : The State of Haryana, created on November 1, 1966 under the Punjab Reorganisation Act, 1966, was formed from the Hindi-speaking parts of the State of Punjab. It comprises the districts of Hissar, Mahendragarh, Gurgaon, Rohtak and Kamal; parts of Sangrur and Ambala districts; and part of Kharar tehsil.

Economy : Agriculture is the profession for over 80 per cent of the people of Haryana. Over 51 per cent of the total cultivable area is under irrigation. The important crops of Haryana are cotton, rice, wheat, maize and bajra. Haryana is not only self-sufficient in foodgrains production but also among the top contributors of foodgrains to the Central pool. Forests cover about 4 per cent of the area.

Limestone, slate, dolomite, building stone, road metals, china clay and marble are some of the important minerals found in Haryana. Graphite and quartzites have also been found at several places in the State.

Cement, sugar, paper, cotton textiles, glassware, brassware, cycles, tractors, motor cycles, time-pieces, automobiles, tyres and tubes, sanitaryware, television sets, steel tubes, hand tools, cotton yarn, refrigerators, vanaspathi ghee and canvas shoes are some of the major industries of Haryana. Panipat is known as 'Weavers City' of India for its exquisite hand-tufted woollen carpets of colourful handloom products.

Haryana shares the multipurpose project on Sutlej and Beas with Punjab. The major irrigation projects are: Western Yamuna Canal, Bhakra Canal System and Gurgaon Canal System.

HIMACHAL PRADESH

Area : 55,673 sq km

Population (1991 census): 5,170,877; growth rate (1981-91): 20.79%

Density per sq km : 93

Sex ratio (females per 1,000 males): 976

Literacy rate: 63.66% (males: 75.36%; females: 52.30%)

Capital : Shimla

No. of Districts : 12

Legislature : Unicameral

Principal Languages : Hindi and Pahari
Important Cities, Towns and Religious/Tourist Places : Baijnath, Bhakra-Nangal, Bilaspur, Chail, Chamba, Chandwick Falls, Chintpurni, Craignano, Daihousie, Dharamsala, Hamirpur, Jawalamukhi, Jogindernagar, Kalpa, Kangra Valley, Kasauni, Keylong, Kufri, Kulu, Lahaul Valley, Mahasu, Manali, Mandi, Mashobra, Nahan, Naldera, Narkanda, Palampur, Pangi Valley, Paonta Sahib, Parvati Valley, Phagu, Shimla, Prospect Hill, Rewalsar Lake, Solan, Spiti Valley, Summer Hill, Tara Devi, Una, Wild Flower Hill are health resorts.
 Temples at Chamunda Devi, Chamunda Devi, Jakhu, Jwalajee, Naina Devi, Renuka and Rewalsar Deot Siddh are pilgrimage centres.

Ski courses are held at Narkanda.

Museum-cum-art gallery in Naggar and Dharamsala.

Tourist resort of Khajair in Chamba district has been christened as the Switzerland of Himachal Pradesh.

Judicature : High Court at Shimla.

Location : Located in north India, Himachal Pradesh is bounded north by Jammu and Kashmir, east by Tibet (China), south-east by Uttar Pradesh, south by Haryana, south-west and west by Punjab.

History : Himachal Pradesh came into being on April 15, 1948 and comprised 30 former hill States. The State of Bilaspur was merged with Himachal Pradesh in 1954. The six original districts were: Mahasu, Simur, Mandi, Chamba, Bilaspur and Kinnaur. On November 1, 1966 under the Punjab Reorganisation Act, 1966 certain parts of the State of Punjab were transferred to Himachal Pradesh. These comprise the districts of Shimla, Kulu, Kangra and Lahaul and Spiti, and parts of Hoshiarpur and Ambala districts. Himachal Pradesh attained full statehood on January 25, 1971 as the 18th State of the Union.

Economy : Agriculture and horticulture are the mainstay of Himachal Pradesh. About 76 per cent of the total working population is engaged in these occupations. About 20 per cent of the net area sown is under irrigation. Fruits and cash crops, like seed potatoes, ginger, vegetable seeds, apples, stone fruits, etc., are grown in the State. Wheat, maize and rice are the major food crops. Besides apples, excellent variety of plums, peaches and apricots is also grown. Forests cover 68 per cent of the area of the State.

Rock salt, slate, gypsum, limestone, barytes, dolomite and pyrites are the important minerals of Himachal Pradesh. Agro-horticulture produce, herbal resources, wool, sericulture and electronics industries have come up in Himachal Pradesh.

There is also a brewery at Solan in the private sector, as also two big cement plants. One of the biggest fruit processing plants in Asia is in operation at Parwanoo.

JAMMU AND KASHMIR

Area : 2,22,236 sq km

Population: 7,718,700*; growth rate (1981-91): 28.92%

Density per sq km : 76

Sex ratio (females per 1,000 males): 923

Literacy rate : NA

Capital : Srinagar (Summer), Jammu (Winter)

No. of Districts : 14

Legislature : Bicameral

Principal Languages : Kashmiri, Dogri, Gujri, Punjabi, Urdu, Balti, Dadri, Pahari and Ladakhi
Important Cities, Towns and Religious/Tourist

Places : Anantnag, Badgam, Baramulla, Chilas, Doda, Gilgit, Gilgit Wazarat, Gulmarg, Jammu, Kargil, Kalhwa, Kokamag, Kubwara, Leh, Mirpur, Muzaffarabad, Pahalgam, Patnitop, Phulwara, Punch, Rajauri, Riasi, Sonamarg, Srinagar—Venice of the Orient (*Achabal Gardens, Chashma Shahi Springs, Dal Lake, Manasbal Lake, Nishat Bagh, Shalimar Bagh, Wular Lake, Mughal Gardens, Nasim Bagh, Hazratbal Mosque, Nagina Lake, Hari Parbat Fort, Sonmarg*), Udhampur, Verinag, Yusmarg.

Other places of historical importance are Valshno Devi temple, Martand Temple, Pandrenthan Temple, Avantil Puri, Pari Mahal and Shankaracharya Hill. Amarnath, 45 km from Pahalgam, is known for the sacred cave and ice lingam symbol of Lord Shiva at a height of about 3,880 metres.

Judicature : High Court at Srinagar and Jammu.

Location : Located in the extreme north, the State is bounded north by China, east by Tibet (China), south by Himachal Pradesh and Punjab and west by Pakistan.

History : The State of Jammu and Kashmir, which had earlier been under Hindu rulers and Muslim sultans, became part of the Mughal Empire under Akbar from 1586. After a period of Afghan rule from 1756, it was annexed to the Sikh kingdom of Punjab in 1819. In 1820 Ranjit Singh made over the territory of Jammu to Gulab Singh. After the decisive battle of Sabraon in 1846 Kashmir also was made over to Gulab Singh under the Treaty of Amritsar. British supremacy was recognised until the Indian Independence Act, 1947, when all States decided on accession to India or Pakistan. Kashmir asked for standstill agreements with both. Pakistan agreed but India desired further

discussion with the Government of Jammu and Kashmir State. In the meantime, the State became object to armed attack from the territory of Pakistan and the Maharaja acceded to India on October 26, 1947 by signing the Instrument of Accession. India approached the UN in January 1948. India-Pakistan conflict ended by ceasefire in January 1949. Further conflict in 1965 was followed by the Tashkent Declaration in January 1966. Following further hostilities between India and Pakistan a ceasefire came into effect on December 17, 1971, followed by the Simla Agreement in July 1972, whereby a new line of control was delineated bilaterally through negotiations between India and Pakistan and came into force on December 17, 1972. Out of the area of 2,22,236 sq km, 78,114 sq km is under illegal occupation of Pakistan and 5,180 sq km illegally handed over by Pakistan to China and 37,555 sq km is under illegal occupation of China.

Economy : About 80 per cent of the people of the State are dependent on agriculture. Rice, maize and wheat are the main crops. Gram, bajra, jowar and barley are also cultivated. Horticulture has made considerable progress in recent years. The State produces fruits and their exports have shown a remarkable increase over the years. The State has a forest area of 21,000 sq km, comprising over 15 per cent of the total geographical area, excluding vast barrenness of Ladakh.

Kashmir handicrafts are famous for excellence and are good foreign exchange earners. There are a large number of cottage industries and small scale industrial units engaged in carpet and shawl making, engraved carpentry and handicrafts.

The future power projects of the State are : Salal Project, Dulhasti Project, Uri Project and Baghliar Project.

KARNATAKA

Area : 1,91,791 sq km
Population (1991 census): 44,977,201; growth rate (1981-91): 21.12%
Density per sq km : 235
Sex ratio (females per 1,000 males): 960
Literacy rate: 56.04% (males: 67.26%; females: 44.34%)

Capital : Bangalore

No. of Districts : 27

Legislature : Bicameral

Principal Language : Kannada

Important Cities, Towns and Religious/Tourist

Places : Badami (later capital of Chalukyans, famous for rock-cut temples), Bandipur (Wildlife

Sanctuary), Bangalore (Vidhana Soudha, Cubbon Park, Chamaraja Sagar, Lalbagh Botanical Gardens, Fort, Tipu Sultan's Palace, Bull Temple, Nandi summer resort), Belgaum (Fort, Gokak Falls), Bellary, Betur (Chenna Kesava Temple), Bhadravali, Bidar, Bijapur (known for Gol Gumbaz, Ibrahim Roza, Asar Mahal, Upli Buruj, Anand Mahal, Mecca Masjid), Chikmagalur, Chitradurga, Davangere, Dharwad, Gulbarga, Halebid (Jayasaleswara and Kedarawara Temples), Hampi (ruins of Vijayanagar empire), Hassan, Hubli, Jog Falls (Gersoppa Falls), Karwar (port and beach), Kolar Gold Fields, Madikeri, Mandya, Mangalore (port and beach), Mysore (known as "garden city" is famous for Brindavan Gardens and Dussehra festivities, Chamundi Hills, Maharaja's Palace), Nagerhole National Park (wild life sanctuary), Ralchur, Ranganathittoo (bird sanctuary), Shimoga, Shravanabelagola (famous for Gomateshwara statue and pilgrimage centre for Jains), Somanathapura, Sringeri, Srirangapatnam (capital of Tipu), Tumkur, Tungabhadra Dam.

Badami, Aihole and Pattadakal are known for rock-cut and structural temples.

Gokarna, Udupi, Dharmasthala, Melkote, Gangapura and Saundatti are famous pilgrimage centres.

Judicature : High Court at Bangalore.

Location : Located in south India, Karnataka is bounded north by Maharashtra, east by Andhra Pradesh, south by Tamil Nadu and Kerala, west by the Arabian Sea and north-west by Goa.

History : The State of Karnataka, constituted as Mysore under the States Reorganisation Act, 1956, brought together the Kannada-speaking people distributed in five States and consisted of the territories of the old States of Mysore and Coorg, the Bijapur, Kanara and Dharwar districts and the Belgaum district (except one taluk) in former Bombay, the major portions of the Gulbarga, Ralchur and Bidar districts in former Hyderabad, and South Kanara district (apart from the Kasargod taluk) and the Kollegal taluk of the Coimbatore district in Madras. Earlier known as Mysore, the State was renamed Karnataka in 1973.

Economy : Karnataka is predominantly agricultural. About 65 per cent of the working population is engaged in agriculture and allied activities which generate about 49 per cent of the State's income. Out of the total land area of the State the net area sown forms 56 per cent. About 22 per cent of the total cultivated area is under irrigation. Rice, ragi, jowar, wheat, maize, pulses are the major food crops of Karnataka.

Sugarcane, cotton, oilseeds, mulberry, tobacco, coconut, arecanut, collee, cashew, cardamom, pepper, oranges and grapes are the main cash crops. Forests occupy 20 per cent of the area of the State.

The State is rich in mineral resources. High grade iron ore, copper, manganese, chromite and china clay are the important minerals available in the State. Karnataka is the only State where gold mining is carried on. The large industries manufacture machine tools, aircraft, electronic products, watches and telecommunication equipment. Other flourishing industries of Karnataka are textiles, sugar, soap, chemical and pharmaceutical goods, fertiliser, paper, cement, glass, ceramics, porcelain and electrical goods. Kudremukh Iron Ore Project at Malleswaram in Chikmagalur District is a major development project of the State. Karnataka stands first in the production of raw silk accounting for about 85 per cent of the raw silk produced in the country. Sandal soap and sandal oil of Karnataka are well known in world markets. Karnataka also stands first in the production of electronic equipments. In fact, Bangalore is known as the "Electronic City of India."

Karnataka is the first State in the country to have generated electricity in Gokak Falls in 1897. The important power projects are: Kalindi, Varahi, Gerusoppa (Sharavathi) and Shivasamudram Hydro Electric Projects. A thermal power station is located at Ralchur and another diesel unit at Yelahanka near Bangalore. An atomic power plant is also being installed at Kalga near Karwar.

New Mangalore is the important seaport of Karnataka. Bangalore, Belgaum and Mangalore are the main airports.

KERALA

Area : 38,863 sq km
Population (1991 census): 29,098,518; growth rate (1981-91): 14.32%
Density per sq km : 749
Sex ratio (females per 1,000 males): 1,036
Literacy rate: 89.81% (males: 93.32%; females: 86.17%)
Capital : Thiruvananthapuram
No. of Districts : 14
Legislature : Unicameral
Principal Language : Malayalam
Important Cities, Towns and Religious/
Tourist Places : Alleppey (sandy beach), Alwaye, Calicut (also called Kozhikode, was capital of Zamorin Rajas; Vasco da Gama landed here in 1498 AD), Cannanore (was capital of Kolathiri Raja), Chorathuruthi (famous poet and

scholar Vallathol set up "Kerala Kalamandalam" here for revival of Kerala art forms), Cranganore (was capital of Cheraman Perumal, king of Kerala), Emakulam, Guruvayoor (famous for ancient shrine of Lord Krishna), Idukki (hydro-electric project), Kaladi (birth place of Adi Sankaracharya, great Indian philosopher of 8th century), Kalpetta, Kasaragod (fort projecting on to the sea), Kochi (earlier name Cochin, known as the Queen of the Arabian Sea), Kodanad (tourist place for trapping and taming wild elephants), Kottayam (main commercial centre), Kovalam (sea-side resort), Kozhikode, Malampuzha (picturesque surroundings and river project), Malappuram, Munnar (highest town of Kerala), Neyyar Dam (famous for scenic beauty), Palghat, Painavu, Pathanamthitta, Periyar (wild life sanctuary located near Thekkadi), Ponmudi (famous hill station), Quilon, Thiruvananthapuram (earlier name Trivandrum, known for Padmanabhaswami temple, Veli lagoon at the outskirts), Trichur.

Judicature : High Court at Emakulam.

Location : Located in south India, Kerala is bounded north by Kamalaka, east and south-east by Tamil Nadu, south-west and west by the Indian Ocean.

History : The State of Kerala, created under the States Reorganisation Act, 1956, consists of the previous State of Travancore-Cochin, except for four taluks of the Trivandrum district and a part of the Shencottah taluk of Quilon district. It took over the Malabar district and the Kasaragod taluk of South Kanara from Madras State.

Economy : Nearly 50 per cent of the population of Kerala is dependent on agriculture for their livelihood. About 13 per cent of the total cropped area is under irrigation. Cashewnut, arecanut, coconut, cotton, oilseeds, pepper, sugarcane, rubber, collee, tea, cocoa, ginger and cardamom are the main cash crops of Kerala. Rice and tapioca are important food crops. Forests account for 24 per cent of the area of the State.

Ilmenite, rutile, monazite, zircon, sillimanite and clay, quartz sand and lime shell are the important minerals of the State. Coir, cashew, rubber, tea, ceramics, electrical and electronic appliances, telephone cables, transformers, bricks and tiles, drugs and chemicals, general engineering, plywood, splints veneers, beedi and cigar, soaps, oils and fertilisers are the important industries of Kerala. The new industries include precision instruments, machine tools, petroleum and petroleum products, fertilisers and allied products, paints, aluminium, communication cables, rubber, rayon, pulp, paper,

scooter, glass and non-ferrous metals. The principal export products are cashew nuts, tea, coffee, pepper and other spices, lemongrass oil, seafoods, rosewood, coir and coir products.

The important power projects are : Panniyar, Sholayar, Sabarigiri, Sengulam, Peringalkuth, Neriamangalam, Idukki, Pallivasal, Edamalayar and Kuttiyadi.

Cochin is the major seaport. There are three airports at Thiruvananthapuram, Cochin and Calicut. Thiruvananthapuram is an international airport.

MADHYA PRADESH

Area : 4,43,446 sq km

Population (1991 census): 66,181,170; growth rate (1981-91): 26.84%

Density per sq km : 149

Sex ratio (females per 1,000 males): 931

Literacy rate: 44.20% (males: 58.42%; females: 28.85%)

Capital : Bhopal

No. of Districts : 45

Legislature : Unicameral

Principal Language : Hindi

Important Cities, Towns and Religious/Tourist Places : Ambikapur, Bagh (fifth to seventh century AD caves), Balaghat, Betul, Bhind, Bhopal (lake-side State capital city), Bilaspur, Burhanpur, Chhatrapur, Chhindwara, Damoh, Datia, Dewas, Dhar, Durg, Guna, Gwalior (beautiful forts), Hoshangabad, Indore (associated with Ahilya Bai), Jabalpur (famous for marble rocks), Jagdalpur, Jhabua, Kanha National Park (wild life sanctuary), Katni, Khandwa (once the capital of Chandella rulers, embodiment of the great artistic activity of the 9th to 12th century AD), Khandwa, Kargone, Mandla, Mandsaur, Mandu (deserted capital of Malwa, Jama Masjid, Jahaz Mahal, Hindola Mahal), Morena, Narsimhapur, Pachmarhi (hill resort), Panna, Raigarh, Raipur, Raisen, Rajgarh, Rajnandgaon, Rattam, Rewa, Sagar, Sanchi (known for Great Stupa and ancient Buddhist monuments), Satna, Sehore, Seoni, Shahdol, Shajapur, Shivpur, Sidhi, Tikamgarh, Ujjain (oldest and holiest city and one of the venues of mammoth Kumbh Mela, former capital of Parmar kings, also associated with Ashoka, Guptas and Vikramaditya), Vidisha.

Judicature : High Court at Jabalpur (with benches at Gwalior and Indore).

Location : Located in central India, Madhya Pradesh is bounded north by Rajasthan and Uttar Pradesh, east by Bihar and Orissa, south by Andhra Pradesh and Maharashtra, west by Gujarat. Madhya Pradesh is the largest State in size.

History : Under the provisions of the States Reorganisation Act, 1956, the State of Madhya Pradesh was formed on November 1, 1956. It consists of the 17 Hindi districts of the previous State of that name, the former State of Madhya Bharat (except the Sunel enclave of Mandsaur district), the former State of Bhopal and Vindhya Pradesh and Sironj subdivision of Kola district which was an enclave of Rajasthan in Madhya Pradesh.

Economy : The economy of Madhya Pradesh is primarily agriculture based. Nearly 80 per cent of the population lives in villages. About 44 per cent of land area is cultivable, of which nearly 17.51 per cent is under irrigation. Jowar, wheat, rice and gram are the main food crops. Oilseeds, cotton and sugarcane are the main commercial crops. Forests cover about 32 per cent of the total area of the State.

Coal, iron ore, limestone, dolomite, bauxite, copper, phosphate, feldspar, asbestos, diamond and manganese ore are the principal mineral deposits found in Madhya Pradesh. The State is the only producer of diamonds and tin ore. Other industries of Madhya Pradesh include potteries, sugar mills, straw board mills, refractories, textile machinery, steel casting and rolling, industrial gases, synthetics and drugs, biscuit manufacturing, engineering tools, mini steel plants, chemical fertiliser, solvent extraction plants, rayon and art silk. Handloom weaved at Chanderi and Maheshwar are famous.

MAHARASHTRA

Area : 3,07,713 sq km

Population (1991 census): 78,937,187; growth rate (1981-91): 25.73%

Density per sq km : 257

Sex ratio (females per 1,000 males): 934

Literacy rate: 64.87% (males: 76.56%; females: 52.32%)

Capital : Mumbai

No. of Districts : 31

Legislature : Bicameral

Principal Language : Marathi

Important Cities, Towns and Religious/Tourist

Places : Ajanta and Ellora (Boust centres), Ahmednagar, Akola, Alibag, Amravati, Amundhanagnath (religious place), Aurangabad, Bhandara, Beed, Buldana, Chandrapur, Dhule, Gadchiroli, Ganapatipule (religious place), Jalgaon, Jaina, Karheri (Boust centre), Karla caves (Boust centre), Kharola (hill resort and Buddhist caves), Kolhapur, Kudal, Latur, Lonavla (hill resort and Buddhist caves), Maharashtra (hill station).

Matheran (*hill station*), Mumbai (*earlier name Bombay, India's largest commercial centre, Gateway of India, Chowmaty, Marine Drive, Malabar Hill, Prince of Wales Museum, Juhu Beach, Elephanta Caves dedicated to Lord Shiva*), Nagpur, Nanded (*religious place*), Nasik (*religious place*), Osmanabad, Panchgani (*hill station*), Pandharpur (*religious place*), Parbhani, Pune, Raigarh, Ratnagiri (*religious place*), Sangli, Satara, Sevagram (*Mahatma Gandhi's ashram*), Shirdi (*pilgrimage place for followers of Shri Sai Baba*), Sholapur, Tadoba National Park (*wildlife sanctuary*), Thane, Trimbakeshwar (*religious place*), Tulajpur (*religious place*), Wardha, Yavatmal.

Judicature : High Court at Mumbai (having benches at Nagpur, Panaji and Aurangabad).

Location : Located in central India, Maharashtra is bounded north and east by Madhya Pradesh, south by Andhra Pradesh, Karnataka and Goa, west by the Arabian Sea and north-west by Daman and Gujarat.

History : Under the States Reorganisation Act, 1956, Mumbai State was formed by merging the States of Kutch and Saurashtra and the Marathi-speaking areas of Hyderabad (commonly known as Marathwada) and Madhya Pradesh (also called Vidarbha) in the old State of Mumbai, after the transfer from that State of the Kannada-speaking areas of the Belgaum, Bijapur, Kanara and Dharwar districts which were added to the State of Mysore (now Karnataka), and the Abu Road taluka of Banaskantha district, which went to the State of Rajasthan.

By the Bombay Reorganisation Act, 1960, which came into force from May 1, 1960, 17 districts (predominantly Gujarati-speaking) in the north and west of Mumbai State became the new State of Gujarat and the remainder was renamed Maharashtra.

Economy : About 70 per cent of the population of Maharashtra is dependent on agriculture for its livelihood. About 12 per cent of the total cropped area is under irrigation. Wheat, rice, jowar, maize, bajra and pulses are the main food crops. Cotton, sugarcane, groundnut and tobacco are the principal cash crops. Forests account for about 27 per cent of the total area of the State.

Iron ore, coal, manganese ore, bauxite and limestone are the important mineral deposits of Maharashtra. The large industries include textiles, spinning and pressing, silk, rayon, synthetic fabrics and vegetable products. Mumbai is the centre of most of the textile mills. The new industrial centres of Maharashtra are in Nasik, Aurangabad, Nagpur, Roha, Tarapur and Ahmednagar. Maharashtra is also a major sugar producing State. Nitrogenous

fertilisers, superphosphates, petrochemicals, drugs and pharmaceuticals, and photographic chemicals are the important chemical industries. Emergence of oil fields at Mumbai High and Basselin North and the new fertiliser unit at Thal-Valshet near Alibag have given further boost to the petrochemical industry in the State. Marine Industries and fish processing units in the coastal area of the State have also been developed.

Maharashtra leads in the motion picture industry. It also leads in sophisticated electronics equipment. A number of defence and public sector industries are located in the State.

Mumbai and Jawaharlal Nehru (Nehru Sheva) are the major ports. Besides, there are 48 minor ports in the State. The major airports are Mumbai, Pune, Aurangabad, Nasik and Nagpur.

MANIPUR

Area : 22,327 sq km

Population (1991 census): 1,837,149; growth rate (1981-91): 29.29%

Density per sq km : 82

Sex ratio (females per 1,000 males) : 958

Literacy rate : 59.89% (males : 71.63%; females : 47.60%)

Capital : Imphal

No. of Districts : 8

Legislature : Unicameral

Principal Language : Manipuri

Important Cities, Towns and Religious/Tourist Places : Bishnupur, Chandel, Churachandpur (beautiful place inhabited by Kuki tribe), Imphal (Shri Govindajee Temple, War Cemeteries, Loktak Lake), Kaina, Keibul, Khongjom, Lamjao (wildlife sanctuary), Khongamat (orchid yard), Mao (hill station), Moirang (known for the old love story of Khumba and Thoibi), Moreh (border town on Indo-Myanmar road), Phubala, Senapati, Sandra, Tamenglong, Thoubal, Ukhrul, Wathou Lake.

Judicature : Manipur comes under the jurisdiction of Guwahati High Court. A circuit bench has been provided at Imphal.

Location : Located in north-east India, Manipur is bounded north by Nagaland, east by Myanmar (Burma), south by Myanmar (Burma) and Mizoram, and west by Assam.

History : Formerly a State under the political control of the Government of India, Manipur entered into interim arrangements with the Indian Union on August 15, 1947 and the political agency was abolished. The administration was taken over by the Government of India on October 15, 1949 under a merger agreement and it became centrally administered by the Government of India through

a Chief Commissioner. In 1950-51 an advisory form of Government was replaced by a Territorial Council of 30 elected and 2 nominated members. Later in 1953 a Legislative Assembly of 50 elected and 3 nominated members was established under the Government of Union Territories Act, 1953. Because of the unstable party position in the Assembly, it had to be dissolved on October 16, 1969, and President's rule was introduced. The status of the administrator was raised from Chief Commissioner to Lieut.-Governor with effect from December 19, 1969. On January 21, 1972 Manipur became a State and the status of the administrator was changed from Lieut.-Governor to Governor.

Economy : The main occupation of 66 per cent of the population of Manipur is agriculture. Nearly 92 per cent of the total land area is hilly and covered with forests. Bamboo is found in large quantities in the State. Main crop is paddy, while wheat and maize are also grown in some areas.

There is no large scale industry in Manipur. Handloom weaving is the largest single cottage industry. Other cottage industries are sericulture, bamboo and cane articles, carpentry, blacksmithy, leather goods, edible oil crushing, rice milling, gur and khandasari.

The commissioning of the Latak Hydro Power Plant has added new dimensions to the power scenario in the State.

Imphal is the only airport.

MEGHALAYA

Area : 22,429 sq km

Population (1991 census): 1,774,778; growth rate (1981-91): 32.66%

Density per sq km : 79

Sex ratio (females per 1,000 males) : 955

Literacy rate : 49.10% (males : 53.12%; females : 44.65%)

Capital : Shillong

No. of Districts : 7

Legislature : Unicameral

Principal Languages : Khasi, Garo and English

Important Cities, Towns and Religious/Tourist Places : Kyllang Rock (near Shillong), Narawang (near Shillong), Nohsngithiang Falls (at Mawmrai near Cherrapunjee), Shillong (beautiful spots such as Ward's Lake, Lady Hydari Park, Polo Ground, mini stadium, Elephant Falls and Shillong Peak and golf course), Umiam Lake (by the side of Shillong-Guwahati road).

Judicature : Meghalaya comes under the jurisdiction of Guwahati High Court. A circuit bench exists at Shillong.

Location : A landlocked territory of lovely hills with abounding sylvan beauty, Meghalaya (meaning 'the abode of clouds') is bounded on the north by Goalpara, Kamrup and Karbi-Anglong districts of Assam State, and on the east by the districts of Cachar and North Cachar Hills, also of the State of Assam. On the south and west is Bangladesh.

History : The State was created under the Assam Reorganisation (Meghalaya) Act, 1969 and inaugurated on April 2, 1970. Its status was that of a State within the State of Assam until January 21, 1972 when it became a full-fledged State of the Union. It consists of the former Garo Hills district and United Khasi and Jaintia Hills district of Assam.

Cherrapunjee, 53 km from Shillong, is noted for its heavy rainfall. The annual average is 10,871 millimetres which varies greatly, 22,837 millimetres were recorded in 1861 with a maximum precipitation in July of 9,296.40 millimetres. The heaviest rainfall in the world is recorded in the nearby village of Mawsynram with an annual average of 12,163 millimetres. The excessive rainfall is due to situation on an amphitheatre relief and on the windward side of the monsoon.

Economy : Agriculture is the main source of livelihood for over 83 per cent of the population of Meghalaya. About 27 per cent of the total cultivated area is under irrigation. Potato, taro, sugarcane, oilseeds, cotton, jute, mesta and arecanut are the main crops. Selected areas have been earmarked for growing high yielding varieties of paddy, wheat and maize. Fruits and vegetables are also grown in the Khasi and Jaintia Hills districts. The State is making good progress in horticulture. Pineapples, oranges and bananas are the important produce. Forests and forest products are the chief resources of the State. Economic plantations of industrial and commercial use are being undertaken extensively.

Coal, limestone, asbestos, mica, iron, bauxite, felspar, quartz and gold are among the minerals of the Khasi hills, Jaintia hills and Garo Hills districts. About 10 per cent of the total output of limestone is produced in the Khasi hills district. The Garo hills district is rich in mica. The State is also rich in forest products. The State is also rich in forest products. The State is also rich in forest products.

MIZORAM

Area : 21,081 sq km
Population (1991 census) : 689,756; growth rate (1981-91): 39.70%

Density per sq km : 33
Sex ratio (females per 1,000 males) : 921
Literacy rate : 82.27% (males : 85.61%; females : 78.60%)

Capital : Aizawl
No. of Districts : 3
Principal Languages : Mizo and English
Important Cities, Towns and Religious/Tourist Places : Aizawl (hilly city (religious and cultural centre of Mizo), Champhal (beautiful resort on the Burma border), Chhimlulpul, Lunglei, Saiha, Situal (picnic spot), Tamdil (natural lake with Virgin Forest around), Wantlang Fall (near hill station of Thenzawl).

Legislature : Unicameral
Judicature : Mizoram comes under the jurisdiction of Guwahati High Court.
Location : One of the eastern-most States, Mizoram lies between Bangladesh and Myanmar (Burma). Tripura, Assam and Manipur border is on the north.

History : By a Constitutional Amendment in 1986, the Union Government decided to confer full Statehood on Mizoram, which became the 23rd State of the Indian Union with effect from February 20, 1987.

The Lushai Hills, sandwiched between Burma in the east and south and Bangladesh in the west, was christened Mizoram when it became a Union Territory in 1972. Located in a strategic position, the 21,081 square km newly formed State has a 1,100 km international boundary with Burma and Bangladesh.

Unlike most other mountain ranges in the entry, which run east to west, the green and the hills of Mizoram run north to south. The phawngpui* or blue mountain, which is still an unclimbed peak, towers to 2,165 metres.

Elders who still call it Lushai say that the Mizos belong to the Mongolian race who migrated to Lushai crossing Burma and China hills about 200 years ago. The British entered the hills about 100 years ago when they annexed the Lushai Hills in 1891. The entire territory was formed into Lushai Hills district and made a part in 1898. The district was carved out of Assam under the Reorganisation Act, 1971 and raised to the status of Union Territory on January 21, 1972.

Economy : Agriculture is the mainstay for about 60 per cent of the population of Mizoram. Only 5 per cent of the total area is under

cultivation. About 7 per cent of the total cultivated area is under irrigation. Maize and paddy are cultivated in the hill slopes. Pulses, sugarcane, chillies, ginger, tobacco, vegetables, turmeric, potato, banana and pineapple are the other crops grown in the State. Forests account for nearly 21 per cent of the area.

Mizoram has no major industry. The cottage industries comprise of handloom and handicrafts. In the small scale sector are the rice milling, oil and flour milling, mechanised bamboo workshops, saw milling, brick making and furniture workshops.

NAGALAND

Area : 16,579 sq km
Population (1991 census) : 1,209,546; growth rate (1981-91): 56.08%

Density per sq km : 73
Sex ratio (females per 1,000 males) : 886
Literacy rate : 61.65% (males : 67.62%; females : 54.75%)

Capital : Kohima
No. of Districts : 8
Legislature : Unicameral
Principal Languages : Ao, Chang, Chakhesang, Sanglam, Konyak, Angami, Sema and Lotha.
Important Cities, Towns and Religious/Tourist Places : Kohima, Mokokchung, Mon, Phok, Tuensang, Wokha, Zunheboto.

Judicature : Nagaland comes under the jurisdiction of Guwahati High Court, which has a circuit bench at Kohima.

Location : Located in the extreme north-east, Nagaland is bounded west and north by Assam, north-east by Arunachal Pradesh, east by Myanmar (Burma) and south by Manipur.

History : Nagaland was constituted by the Union Government in September 1962. It comprises the former Naga Hills district of Assam and the former Tuensang Frontier division of the North-East Frontier Agency; these had been made a Centrally administered area in 1957, administered by the President through the Governor of Assam. In January 1961 the area was renamed and given the status of a State of the Indian Union, which was officially inaugurated on December 1, 1963.

For some years a section of the Naga leaders sought independence. Military operations from 1960 and the prospect of self-government within the Indian Union led to a general reconciliation but rebel activity continued. A two-month amnesty in mid-1963 had little effect. A "cease-fire" in September 1964 was followed by talks between a Government of India delegation and rebel leaders.

The peace period was extended and the "Revolutionary Government of Nagaland" (a breakaway group from the Naga Federal Government) was dissolved in 1973. Further talks with the Naga underground movement resulted in the Shillong Peace Agreement of November 1975.

Economy : Agriculture is the main occupation of 90 per cent of the people of Nagaland. Rice is the only important foodgrain grown in the State. Forests cover 17.56 per cent of the area of the State. Clay, coal, glass, limestone and sand are the minerals found in Nagaland. Handloom and sericulture are the important cottage industries.

ORISSA

Area : 1,55,707 sq km

Population (1991 census): 31,659,736; growth rate (1981-91): 20.06%

Density per sq km : 203

Sex ratio (females per 1,000 males): 971

Literacy rate : 49.09% (males : 62.09%; females : 34.68%)

Capital : Bhubaneswar

No. of Districts : 30

Legislature : Unicameral

Principal Language : Oriya

Important Cities, Towns and Religious/Tourist Places : Balasore, Baripada, Bhubaneswar, Bhawanipatna, Bhubaneswar (*temple city known for Lingaraja Temple, Mukteswar Temple, Ananta Basudeva Temple, Rajarani Temple*), Bolangir, Chhatrapur, Chilika Lake (*Kalijal Temple is located inside the lake*), Cuttack, Dhenkanal, Keonjhar, Konark (*Black Pagoda—Sun Temple*), Koraput, Nandankananam (*zoological park*), Phulbani, Puri (*Lord Jagannath Temple and beautiful seabeach; also known for the Car Festival*), Rourkela, Sambalpur, Sundargarh.

Places of tourist importance : Dhauli Buddhist temple, Udayagiri-Khandagiri ancient caves, Ratnagiri-Lalitgiri and Udayagiri, Buddhist images and ancient caves, Saptasajya scenic view of hill beds.

Similipal National Park and Tiger Project, Hirakud Dam, Duduma Watertall, Ushakothi Wildlife Sanctuary, Gopalpur Sea Beach, Hanishankar, Nrusinghanath, Taralanti, Taplapani, Bhitarakanika and Bhimakunda Kapilash are famous places.

Hirakud Dam across the turbulent Mahanadi river is the *biggest single dam* constructed in the country.

Judicature : High Court at Cuttack.

Location : Located in eastern India, Orissa is bounded north by Bihar, north-east by West Bengal, east by the Bay of Bengal, south

by Andhra Pradesh and west by Madhya Pradesh.

History : Orissa, ceded to the Mahrattas by Alivardi Khan in 1751, was conquered by the British in 1803. In 1803 a board of two commissioners was appointed to administer the province, but in 1805 it was designated the district of Cuttack and was placed in charge of a collector, judge and magistrate. In 1829 it was split up into three regulation districts of Cuttack, Balasore and Puri, and the non-regulation tributary states which were administered by their own chiefs under the aegis of the British Government. Angul, one of these tributary states, was annexed in 1847 and with the Khondmals, ceded in 1835 by the tributary chief of the Boudh state, constituted a separate non-regulation district. Sambalpur was transferred from the Central Provinces to Orissa in 1905. These districts formed an outlying tract of the Bengal Presidency till 1912 when they were transferred to Bihar, constituting one of its divisions under a commissioner. Orissa was constituted as a separate province on April 1, 1936, some portions of the Central Provinces and Madras being transferred to the old Orissa division.

The rulers of 25 Orissa states surrendered all jurisdiction and authority to the Government of India on January 1, 1948, on which date the Provincial Government took over the administration. The administration of two states, viz., Saraikella and Kharswan, was transferred to the Government of Bihar in May 1948. By an agreement with the Dominion Government, Mayurbhanj State was finally merged with the province on January 1, 1949. By the States Merger (Governors' Provinces) Order, 1949, the states were completely merged with the State of Orissa on August 19, 1949.

Economy : The main occupation of over 80 per cent of the people of Orissa is agriculture. The important crops are rice, pulses, oilseeds, jute, mesta, sugarcane, coconut and turmeric. Forests cover about 43 per cent of the area of the State.

Iron ore, manganese ore, limestone, dolomite, chromite, non-coking coal, bauxite, graphite, china clay, nickel ore, fire clay and mineral sands are among the important minerals of Orissa. The major mineral-based industries of the State are the Rourkela steel plant, a pig iron plant at Barbel and a ferrochrome plant at Jaipur Road, two ferro-manganese plants, a ferro-silicon plant and an aluminium smelter plant.

The power projects in the State are Rengali, Upper Kolab and Kendupatna. Besides Hirakud and Tatcher, work on new thermal and hydro

projects like Sindol, Chipilima, Duburi, Naraj, Gopalpur, Durgapur and Hirma is in progress.

PUNJAB

Area : 50,362 sq km

Population (1991 census) : 20,281,969; growth rate (1981-91) : 20.81%

Density per sq km : 403

Sex ratio (females per 1,000 males) : 882

Literacy rate : 58.51% (males : 65.66%; females : 50.41%)

Capital : Chandigarh

No. of Districts : 17

Legislature : Unicameral

Principal Language : Punjabi

Important Cities, Towns and Religious/Tourist

Places : Amritsar (Golden Temple, Durgiana Temple, Jallianwala Bagh), Anandpur Sahib, Bathinda (built by Rajput Bhatli Rao), Bhakra Dam, Faridkot, Ferozpur, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Nangal Dam, Pathankot, Patiala, Reigar (famous for ruins of Harappan city), Sangrur, Taran Taran (Gurudwara in commemoration of Guru Ramdas).

Judicature : Punjab and Haryana have a common High Court at Chandigarh.

Location : Located in north India, Punjab is bounded at its northmost point by Jammu and Kashmir, north-east by Himachal Pradesh, south-east by Haryana, south by Rajasthan, west and north-west by Pakistan.

History : Punjab was constituted as an autonomous province of India in 1937. In 1947, the province was partitioned between India and Pakistan into East Punjab and West Punjab respectively, under the Indian Independence Act, 1947, the boundaries being determined under the Radcliffe Award. The name of East Punjab was changed to Punjab under the Constitution of India. On November 1, 1956 the erstwhile States of Patiala and East Punjab States Union (PEPSU) were integrated with Punjab to form the State of Punjab. On November 1, 1966, under the Punjab Reorganisation Act, 1966, the State was reconstituted as a Punjabi-speaking State comprising the districts of Gurdaspur (excluding Dalhousie), Amritsar, Kapurthala, Jalandhar, Ferozpur, Bathinda, Patiala and Ludhiana, parts of Sangrur, Hoshiarpur and Ambala districts, and parts of Khairpur tehsil. The remaining area comprising an area of 46,620 sq km (18,000 sq miles) and an estimated (1967) population of 8.5 million was shared between the new States of

Haryana and Himachal Pradesh. The existing capital of Chandigarh was made the joint capital of Punjab and Haryana.

Economy : For about 70 per cent of the people of Punjab, agriculture is the mainstay. About 84 per cent of the total area of the State is under cultivation. Wheat, rice, maize, bajra, jowar, gram, barley and pulses are the important foodgrains. Oilseeds, sugarcane, tobacco, cotton and potatoes are the principal cash crops. The State is surplus in foodgrains, especially wheat and rice.

Punjab is known for the small scale industries which consist of footwear, machine tools, bicycles, bicycle parts, sewing machines and parts, plastic goods, pipes, sports goods, nuts and bolts, wood and screws, etc. Seventy per cent of the woollen hosiery of India is produced in the State.

The major irrigation and power projects of Punjab are : Bhakra-Nangal, Ganguwal, Kotla, Hanka, Sirhind & Madhopur, Madhopur Beas Link was constructed to transfer surplus water of Ravi to Beas. A similar Beas-Sutlej link project envisages utilisation of Beas water for the production of electricity at Salappur and then transfer of its water to Gobind Sagar Lake, Pong Dam on the Beas, Mukerian hydel electric project and Beas Sutlej link projects are two important projects. The important thermal projects are Guru Nanak Thermal Plant at Bathinda and Guru Gobind Singh Thermal Plant at Jopar. The Ranjit Sagar Dam (earlier known as Thain Dam) is in progress.

There are airports at Amritsar, Bathinda, Chandigarh and Ludhiana.

RAJASTHAN

Area : 3,42,239 sq km

Population (1991 census) : 44,005,990; growth rate (1981-91) : 28.44%

Density per sq km : 129

Sex ratio (females per 1,000 males) : 919

Literacy rate : 38.55% (males : 54.99%; females : 20.44%)

Capital : Jaipur

No. of Districts : 32

Legislature : Unicameral

Principal Languages : Hindi and Rajasthani

Important Cities, Towns and Religious/Tourist Places : Ajmer (Dargah of Khwaja Moin-ud-Din Chishti), Mayo College, Pushkar Lake), Alwar (Sarsika Tiger Sanctuary), Banswara, Barmer, Bharatpur (historic fort, Keoladeo Ghana Bird Sanctuary), Bhilwara, Bikaner (a desert city, known

for 16th century *Lalgarth Palace* built by *Raja Rai Singh*), *Bundi*, *Chittorgarh* (founded by great *Rajput* resistance hero, *Bappa Rawal* in 734 AD was centre of *Rajput* resistance against *Mughal* rule, famous for *Chittor Fort*, *Kirti Stambha* [Tower of Fame], *Jai Stambha* [Tower of Victory], *Meera Temple*, *Rana Kumbha Palace*), *Churu*, *Dholpur*, *Dungarpur*, *Ganganagar*, *Jaipur* (pink rose capital city of the State, known for *Maharaja Palace*, *Hawa Mahal* [Palace of Winds], *Jantar Mantar Observatory*, *Museum* and *Ram Niwas Garden*; the 17th century old palace of *Amber* is located 11 km from here), *Jaisalmer*, *Jaler*, *Jhalawar*, *Jhunjhunu*, *Jodhpur* (a city of seven gates, *Guland Sagar Lake*, *Hall of Heros*), *Keta*, *Mount Abu* (hill resort, known for *Dilwara Temples* (sacred to *Jains*), *Nagaur*, *Nathdwara* (12th century temple dedicated to *Lord Krishna*), *Pali*, *Sarsika* (wildlife sanctuary), *Sawai Madhopur*, *Sikar*, *Sirohi*, *Tonk*, *Udaipur* (founded by *King of Mewar Maharana Udai Singh*, it is known as "City of Sunrise" and "Venice of the East", *Fateh Sagar Lake*, *Lake Pichola*, *Raj Mahal*, *Jag Mandir Palace*, *Jag Nivas Palace*).

Judicature : High Court at *Jodhpur* (also has a bench at *Jaipur*).

Location : Located in north-west India, *Rajasthan* is bounded north by *Punjab*, north-east by *Haryana* and *Uttar Pradesh*, east by *Madhya Pradesh*, south by *Gujarat* and west by *Pakistan*.

History : As a result of the implementation of the *States Reorganisation Act*, 1956, the erstwhile State of *Ajmer*, *Abu Taluka* of *Bombay State* and the *Sunel Tappa* enclave of the former State of *Madhya Bharat* were transferred to the State of *Rajasthan* on November 1, 1956, whereas the *Sirohi* sub-division of *Rajasthan* was transferred to the State of *Madhya Pradesh*. The State now comprises of 27 districts, the *Dholpur* district having come into being on April 15, 1962.

Economy : About 19 per cent of the total sown area in *Rajasthan* is under irrigation. Agricultural production is mainly dependent on rainfall. *Jowar*, *bajra*, *maize*, *gram*, *wheat*, *oilseeds*, *cotton*, *sugarcane* and *tobacco* are the main crops.

India's entire output of *lead* and *zinc* concentrates, *emeralds* and *gemets* are found in *Rajasthan*. Similarly, 94 per cent of country's *gypsum*, 76 per cent of *silver ore*, 84 per cent of *asbestos*, 68 per cent of *felspar* and 12 per cent of *mica* are mined in the State. Rich salt deposits are available at *Sambhar* and other places. *Khatris* and *Danba* are known for *copper mines*.

The major industries of *Rajasthan* include *textiles*, *rugged* and *woollen goods*, *sugar*, *cement*,

glass, *sodium producing plant*, *oxygen* and *acetylene producing units*, *manufacture of pesticides*, *insecticides* and *vegetable dyes*, *zinc smelter*, *fertiliser*, *railway wagons*, *ball bearings*, *water* and *electric metres*, etc. *Manufacture of caustic soda*, *calcium carbide*, *nylon* and *tyre cord* and *copper smelting* are the other enterprising units. *Rajasthan* is also known for *handicrafts*, the important being *marble work*, *woollen carpets*, *articles of leather*, *pottery*, *jewellery*, *embroidery* and *brass embossing*.

There are airports at *Jaipur*, *Jodhpur* and *Udaipur*.

SIKKIM

Area : 7,096 sq km

Population (1991 census) : 406,457; growth rate (1981-91) : 28.47%

Density per sq km : 57

Sex ratio (females per 1,000 males) : 878

Literacy rate : 56.94% (males : 65.74%; females : 46.69%)

Capital : *Gangtok*

No. of Districts : 4

Legislature : Unicameral

Principal Languages : *Bhutia*, *Nepali*, *Lepcha* and *Limbu*

Important Cities, Towns and Religious/Tourist Places : *Bankhim Natural Garden*, *Changu Lake*, *Dubdi* (monastery), *Gangtok* (capital since mid-1800s, previous capitals were at *Yuksam* and *Rabdentse*; one can have excellent views of the entire *Kanchenjunga* range from any point in the vicinity), *Gyalshing*, *Mangan*, *Namchi*, *Pemayantse* (monastery), *Phodang* (monastery), *Tashiding* (monastery), *Rumtek* (monastery), *Tashi View Point* (picnic spot where a panoramic view of *Kanchenjunga* can be had), *Yuksam* (meeting place of the great *Lamas*).

Judicature : High Court at *Gangtok*.

Location : Located in the Eastern Himalayas, *Sikkim* is bounded north by *Tibet* (China), east by *Tibet* and *Bhutan*, south by *West Bengal* and west by *Nepal*. It is the least populated State of the Indian Union.

History : *Sikkim* became a full-fledged state of the Indian Union with effect from April 26, 1975. Earlier in September 1974, it became an associated State. The Legislative Assembly adopted a resolution on April 10, 1975 about the institution of *Chogyal* and seeking for the full statehood in the Indian Union.

Sikkim is inhabited chiefly by the *Lepchas* who are a tribe indigenous to *Sikkim* and *Nepal* and their own dress and language.

originally came from Tibet, and the Gorkhalis (Nepalis), who entered from Nepal in large numbers in the late 19th and early 20th century.

Economy : Sikkim's economy is principally agrarian. The main crops are rice, maize, wheat, millet and barley. Only 11 to 12 per cent of the total land is available for cultivation and there is no scope for expansion. The principal cash crops are cardamom, orange, potato, citrus, apple and pineapple. Sikkim accounts for the highest production of large cardamom in India. About a third of the area is under forests.

High grade deposits of gold, silver, copper and zinc in combined form have recently been located. The copper mine of Dikchu is under exploration. Wool weaving and carpet weaving are among important traditional industries.

The important hydel projects are Kalez Hydel Project and Lachung in North Sikkim.

TAMIL NADU

Area : 1,30,058 sq km

Population (1991 census) : 55,638,318 growth rate (1981-91) : 15.39%

Density per sq km : 429

Sex ratio (females per 1,000 males) : 974

Literacy rate : 62.66% (males : 73.75%; females : 51.33%)

Capital : Chennai

No. of Districts : 29

Legislature : Unicameral

Principal Language : Tamil

Important Cities, Towns and Religious/Tourist

Places : Anamalai (Wild Life Sanctuary), Chennai (earlier name Madras, Fort St. George and St. Mary's Church, Gandhi Mandapam, Tapaleeswarar Temple, Marina Beach, Aquarium, Parthasarathy Temple, San Thome Cathedral, Fort Museum, Snake Park, Vedanthangal Bird Sanctuary, Guindy Wild Life Sanctuary, Vandalur Zoological Park), 'dambaram (abode of Nataraja [the "Dancing Shiva"], temples of Dravidian architecture), Chithannavasal (monument centre), Coimbatore, Courtallam (hill station), Covelong (beach resort), Duddalore, Dharasuram (monument centre), Dharmapuri, Dindigul, Elagiri (hill station), Erode, Hogenakkal (hill station), Kalakad (Wild Life Sanctuary), Kancheepuram (the "Golden City" known for silk industry was successively capital of the Pallavas, the Cholas and the kings of Vijayanagar, known for the seventh century temples), Kanyakumari (earlier known as Cape Comorin, sacred place to Hindus, impressive memorial of Swami Vivekananda), Kazhugumalai (monument centre), Kodaikanal (hill resort),

Kumbakonam (monument centre), Madurai (Meenakshi Temple, Tirumalai Nayak Temple, rock-cut temple at Tiruparankundram), Mahabalipuram (also known as Mamallapuram, famous beach and solid rock monuments), Moovarkoil (monument centre), Nagoor (monument centre), Mundanthur (Wild Life Sanctuary), Mudumalai (Wild Life Sanctuary), Nagapattinam, Nagercoil, Narthamalai (monument centre), Ootacamund [Udhagamandalam] (hill resort), Papanasam (hill station), Point Calimere (Bird Sanctuary), Pudukkottai, Ramanathapuram, Rameshwaram (sacred town built on an island in the Palk Straits), Salem, Singanallur, Sivagangai, Srirangam (monument centre), Suruli (water falls), Thanjavur (capital of Chola emperors during 10th to 14th centuries AD, Brihadeeswara Temple), Tirunelveli (monument centre), Tiruppur, Tranquebar (monument centre), Tiruvannamalai (monument centre), Tuticorin, Udagamandalam (Ooty), Vedanthangal (Bird Sanctuary), Velankanni (monument centre), Vellore, Virudhunagar, Yercaud (hill station).

Judicature : High Court at Madras.

Location : Located in South India, Tamil Nadu is bounded north by Karnataka and Andhra Pradesh, east by the Bay of Bengal, south by the Indian Ocean and west by Kerala.

History : The first trading establishment made by the British in the Madras State was at Peddapalli (now Nizampatnam) in 1611 and then at Masulipatnam. In 1639 the English were permitted to make a settlement at the place which is now Madras and Fort St. George was founded. By 1801 the whole of the territory from the Northern Circars to Cape Comorin (with the exception of certain French and Danish settlements) had been brought under British rule.

Under the provisions of the States Reorganisation Act, 1956, the Malabar district (excluding the Islands of Laccadive and Minicoy) and the Kasaragod taluk of South Kanara district were transferred to the new State of Kerala; the South Kanara district (excluding Kasaragod taluk and the Amindivi Islands) and the Kollegal taluk of the Coimbatore district were transferred to the new State of Mysore; and the Laccadive, Amindivi and Minicoy Islands were constituted as a separate Union Territory. Four taluks of the Thiruvananthapuram district and the Shencottah taluk of Quilon district were transferred from Travancore-Cochin to the new Madras State. On April 1, 1960, an area of 1,049 sq km (405 sq miles) from Chittoor district of Andhra Pradesh was transferred to Madras in exchange for 845 sq km (326 sq miles) from the

Chingleput and Salem districts. In August 1968 the State was renamed Tamil Nadu.

Economy : More than 70 per cent of the population is engaged in agriculture as State's economy is largely dependent on agricultural sector. About 48 per cent of the total cultivated area is under irrigation. The principal food crops are rice, maize, jowar, bajra, ragi and pulses. The main commercial crops are sugarcane, oilseeds, cotton, chillies, coffee, tea and rubber. Forests cover about 17 per cent of State's area.

Some of the minerals found in the State are limestone, magnesite, mica, quartz, feldspar, salt, bauxite, lignite and gypsum. The major industries of the State are cotton textiles, chemicals, fertilisers, paper and paper products, printing and allied, industries, diesel engines, automobiles and parts, cement, sugar, iron and steel and railway wagons and coaches. Tamil Nadu is an important exporter of tanned skin and hides and leather goods, cotton piecegoods, tea, coffee, spices, tobacco, etc.

Tamil Nadu has a number of hydro-electric and thermal stations. The atomic power plant is located at Kalpakkam in Chengalpattu MGR district. Madras is the international airport. Besides, there are airports at Tiruchirappalli, Madurai, Coimbatore and Salem.

Madras and Tuticorin are the major ports, while Cuddalore and Nagapattinam are minor ports.

TRIPURA

Area : 10,491 sq km
Population (1991 census) : 2,757,205; growth rate (1981-91) : 34.30%

Density per sq km : 263
Sex ratio (females per 1,000 males) : 945
Literacy rate : 60.44% (males : 70.08%; females : 50.01%)

Capital : Agartala
No. of Districts : 4
Legislature : Unicameral
Principal Languages : Bengali, Kachar and Manipuri.

Important Cities, Towns and Religious/Tourist Places : Agartala (capital city), Bhuvaneshwar Temple, Brahmakanda, Dumbor Lake, Jampui Hill, Kailashshahr, Kama'sagar, Malabiri, Nimahar (lake palace), Rabindrakavan, Siphajala, Tripurasundar Temple, Trishna Wild Sanctuary, Udaipur, Unakoti.

Judicature : Tripura comes under the jurisdiction of Guwahati High Court, which has a circuit bench at Agartala.

Location : Tripura is bounded on the north, west and south by Bangladesh and on the north-east by Assam and Mizoram.

History : A Hindu State of great antiquity having been ruled by the Maharajas for 1,300 years before its accession to the Indian Union on October 15, 1949. With the reorganisation of States on September 1, 1956 Tripura became a Union Territory. The Territory was made a State on January 21, 1972.

Economy : About 25 per cent of the area is used for agriculture. Paddy, wheat, jute, sugarcane, mesta, potato, oilseeds, pulses and cotton are the main crops. Forests cover about 55 per cent of the area of the State.

Tea is the principal industry of the State. Handloom is the single largest industry in the State. Important cottage industries of Tripura are handloom, handicraft and khadi. There are also small scale units for aluminium utensils, steel furniture, pharmaceuticals, leather goods, fruit canning, oil mills, plywood, rice mill, washing soap, etc. Agartala is the main airport.

UTTAR PRADESH

Area : 2,94,411 sq km
Population (1991 census) : 139,112,287; growth rate (1981-91) : 25.48%
Density per sq km : 473
Sex ratio (females per 1,000 males) : 879
Literacy rate : 41.60% (males : 55.35%; females : 25.31%)

Capital : Lucknow
No. of Districts : 83
Legislature : Bicameral
Principal Languages : Hindi and Urdu
Important Cities, Towns and Religious/Tourist Places : Agra (world famous Taj Mahal, Skandara, Agra Fort, Fatehpur Sikri), Aligarh (formerly known as Koil, this ancient city has traces of Buddhist and Hindu temples; now famous for Aligarh Muslim University), Allahabad (earlier known as Prayag [meaning a place of sacrifice], it is near the confluence of rivers Ganga and Yamuna, it is an ancient Hindu pilgrimage city), Almorah, Ayodhya (birthplace of Lord Rama and important pilgrimage centre; was in the news for the destruction of Babri Masjid), Azamgarh, Badrinath (famous Badrinath Temple), Bahraich, Ballia, Bareilly (former capital of the region known as Rohilkhanda), Bithur, Buddaun, Bulandshahr, Chanderi, Dehra Dun, Deoria, Durgam, Etah, Etawah (important town during Mughal period), Faizabad.

Fatehpur Sikri (deserted sandstone city located near Agra, Dargah of Sheikh Salim Chisti), Firozabad, Gangotri (source of river Ganga), Garhwal (Pauri), Ghaziabad, Ghazipur, Gonda, Gorakhpur (Gorakhnath temple; Geeta Press publishing Hindu religious literature), Hamirpur, Haridwar (Hindu pilgrimage place on bank of Ganga), Jaunpur, Jhansi (historical place; famous for Jhansi fort; transit point for Khajuraho), Kannauj (once a mighty Hindu city, it was raided by Mahmud of Ghazni; here Humayun was defeated by Sher Shah in 1540), Kanpur (sometimes called the 'Manchester of India' is an important industrial town; city was earlier known as 'Cawnpore'), Kedarnath (famous Kedarnath Temple has a huge statue of Nandi (sacred bull)), Kheri, Lalitpur, Lucknow (named after Lakshman, younger brother of Lord Rama, the hero of the famous epic "Ramayana", the city stands on river Gomati; known for Bara Imambara, Husainabad Imambara, Rumi Darwaza, Chhattar Manzil, Wingfield Park), Maharajganj, Mahoba, Mainpuri, Mathura (situated on the banks of river Yamuna, place of Hindu pilgrimage and birth place of Lord Krishna), Moradabad, Muzaffarnagar, Nainital, Narendra Nagar, Oran, Pilibhit, Pithoragarh, Pratapgarh, Prayag (known for the confluence of rivers Ganga and Yamuna), Rae Bareilly, Rampur, Rishikesh (gateway to the "Kingdom of Gods"—Badrinath, Kedarnath, Gangotri, Yamotri), Robertsganj, Saharanpur, Samath (major Buddhist centre; known for Deer Park, Dhamekh Stupa, Dharmarajika Stupa and Ashoka Pillar), Shahjahanpur, Siddharth Nagar, Sitapur, Sultanpur, Unao, Uttarkashi, Varanasi (Hindu pilgrimage town located on the banks of Ganga, Benares Hindu University, Bharat Mata Temple, Durga Temple, Gyanvapi Mosque, Alamgir Mosque, Samath, Tulsi Manas Temple, Vishwanath Temple, New Vishwanath Temple), Vindhyachal (place of pilgrimage), Yamnoli (source of river Yamuna).

Other important places of pilgrimage : Vindhyachal, Ayodhya, Chitrakoot, Prayag, Bageshwar, Jogeshwar, Pauri, Naini Sharanya, Vrindavan, Nanakmatta, Hemkund Sahib, Deva Shariel Pearankar, Sharvasti, Kushinagar, Sankisa, Kampil, Piprahva, Kaushambi.

Magnificent scenic beauty spots : Sangam in Allahabad, Hindon (Ghaziabad and Tanda waterfalls in Faizabad, Okhla, Dehradun, Mussoorie, Chakrata, Nainital, Ranikhet, Almora, Kasauli,

Pindari Glacier, Corbett National Park and Dudhwa Sanctuary.

Judicature : High Court at Allahabad. There is a bench at Lucknow also.

Location : Located in north India, Uttar Pradesh is bounded north-west by Himachal Pradesh, north by Tibet (China) and Nepal, east by Bihar, south and south-west by Madhya Pradesh and west by Rajasthan, Haryana and Delhi.

History : In 1833 the then Bengal Presidency was divided into two parts, one of which became the Presidency of Agra. In 1836 the Agra area was styled the North-West Province and placed under a Lt.-Governor. The two provinces of Agra and Oudh were placed in 1877 under one administrator, styled Lt.-Governor of the North-West Province and Chief Commissioner of Oudh. In 1902 the name was changed to "United Provinces of Agra and Oudh", under a Lt.-Governor and the Lt.-Governorship was altered to a Governorship in 1921. In 1935 the name was shortened to "United Provinces". On Independence, the States of Rampur, Banaras and Tehri-Garhwal were merged with United Provinces. In 1950 the name of the United Provinces was changed to Uttar Pradesh.

Economy : For about 78 per cent of the population of Uttar Pradesh, agriculture is the main occupation. Wheat, rice, gram, barley, maize and bajra are the principal food crops. Cotton, linseed, groundnut, sugarcane, tea, sesamum, rapeseed, mustard and tobacco are the main cash crops. Uttar Pradesh is the main opium growing State of India. In some parts of the State, jute is also cultivated. It is the largest producer of foodgrains, sugarcane and oilseeds. The State is India's "sugarcane bowl."

Limestone, dolomite, magnesite, coal, copper, gypsum, glass-sand, marble and phosphorite are the main minerals found in the State. Uttar Pradesh is one of the important sugar producing States. The important industries of the State are cotton and woollen textiles, leather and footwear, distilleries and breweries, paper, chemicals, agricultural implements and glass and glass products. Handloom is the largest cottage industry of the State. The traditional handicrafts are silk fabrics, metalware, wood work, ceramics, stone work, dolls, artistic leather articles, perfumery, bamboo products and musical instruments.

irrigation projects coming up in the State
Khwar Vyasi, Eastern Ganga Canal,
ation of Upper Ganga Canal, Maudaka
arda Sahayak, Saryu Canal and Urmil

orts are located at Lucknow, Kanpur,
il, Allahabad, Agra, Jhansi, Bareilly, Hindon
abad), Gorakhpur, Saraswa (Saharanpur),
gar (Nainital), Jolly Grant (Dehra Dun) and
anj (Rae Bareilly).

WEST BENGAL

Area : 88,752 sq km
Population (1991 census) : 68,077,965; growth
(1981-91) : 24.73%

Density per sq km : 767
Sex ratio (females per 1,000 males) : 917
Literacy rate : 57.70% (males : 67.81%;
females : 46.56%)

Capital : Calcutta

No. of Districts : 19

Legislature : Unicameral

Principal Language : Bengali

Important Cities, Towns and Religious/Tourist
places : Alipur, Asansol, Balurghat, Bakkhali Sea
port, Bakreshwar, Bankura, Barasat, Bardhaman,
Bhatnagar, Calcutta (India's largest city and third
largest in the world, Howrah Bridge renamed
Rabindra Setu, Maidan, Chowringhee, Victoria
Memorial, Indian Museum, Zoological Garden,
Dakshineswar Temple, Shaheed Minar, Fort
William, Jorasanko Thakurbari—birthplace of
Rabindranath Tagore, Rabindra Sarovar, Nehru
Children Museum, Paresnath Temple, Kalighat
Temple, Bird Planetarium, India's first underground
railway), Cooch Behar, Darjeeling (hill stations,
Mirik, Kalimpong, Sandakfu and Falut and
 Kurseong), Digha (Midnapore), Durgapur (Burdwan),
Hugli, Jalpaiguri (Jaldapara and Dooars), Kharagpur,
Krishnagar, Malda (Gour and Pandua), Medinipur,
Murshidabad, Purulia, Sagar Island and Sunderbans
(South 24-Parganas), Shantiniketan, Suri,
Tarakeswar.

Judicature : High Court at Calcutta.

Location : Located in north-east India, West
Bengal is bounded north by Sikkim and Bhutan,
east by Assam and Bangladesh, south by the
Bay of Bengal and Orissa, west by Bihar and
north-west by Nepal.

History : Under the terms of the Indian
Independence Act, 1947, the province of Bengal
ceased to exist. The Muslim majority districts of
East Bengal, consisting of the Chittagong and

Dacca Divisions and portions of the Presidency
and Rajshahi Divisions, became what was then
East Pakistan (now Bangladesh).

The State of West Bengal came into existence
as a result of the Indian Independence Act, 1947.
The territory of Cooch Behar was merged with
West Bengal on January 1, 1950 and the former
French possession of Chandernagore became
part of the State on October 2, 1954. Under
the States Reorganisation Act, 1956, certain
portions of Bihar State were transferred to West
Bengal.

Economy : For about 55 per cent of the
population of West Bengal agriculture is the main
occupation. Agriculture contributes nearly 50 per
cent of the State Income. About 45 per cent of
the total cultivated area is under irrigation. West
Bengal occupies a leading position among the rice
producing States in India. The State accounts for
about 57.3 per cent of jute produced in the
country and more than 24 per cent of tea
production. The export of these two brings about
considerable foreign exchange for the State.

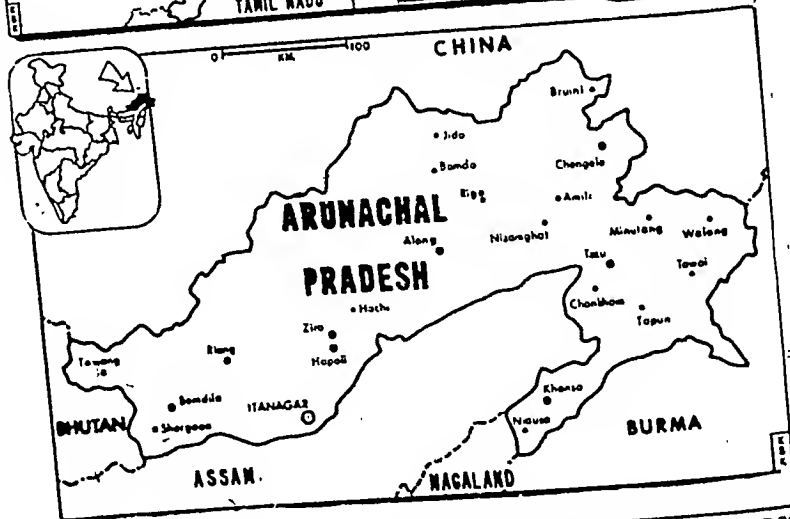
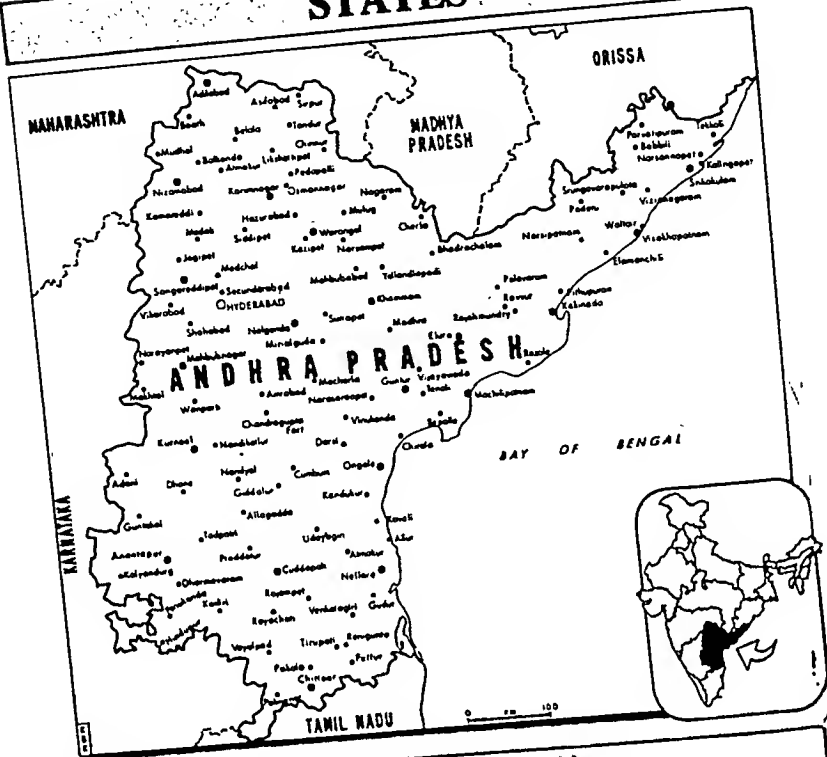
Pulses, oilseeds, barley, maize, betel leaf,
tobacco and sugarcane are the important crops
of West Bengal. About 13.4 per cent of the State
is covered with forests.

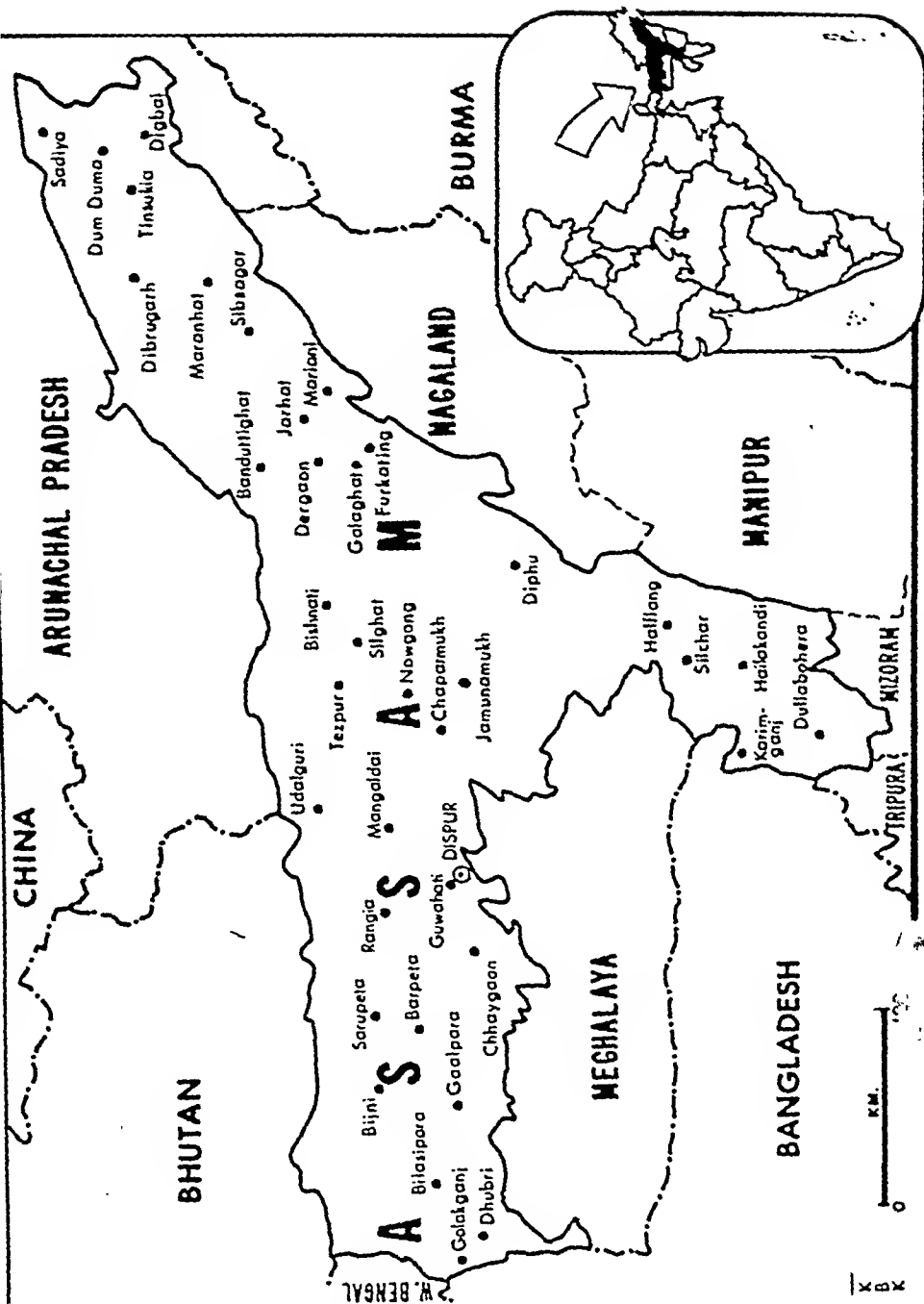
Coal, china clay and dolomite are the three
most important minerals available in West Bengal.
Other minerals are rock phosphate, fire clay,
limestone, copper, iron, silica, quartz, manganese
and sandstone. One steel plant and one alloy
steel plant at Durgapur and another steel plant at
Burmapur are the important industries of West
Bengal. Other major industries of the State are
jute, tea, cotton textiles, silk, automobiles, bicycles,
light engineering, paper, pharmaceuticals,
chemicals, aluminium, sugar, timber processing,
ceramic and glass, leather and footwear, bone-
meal and dairying.

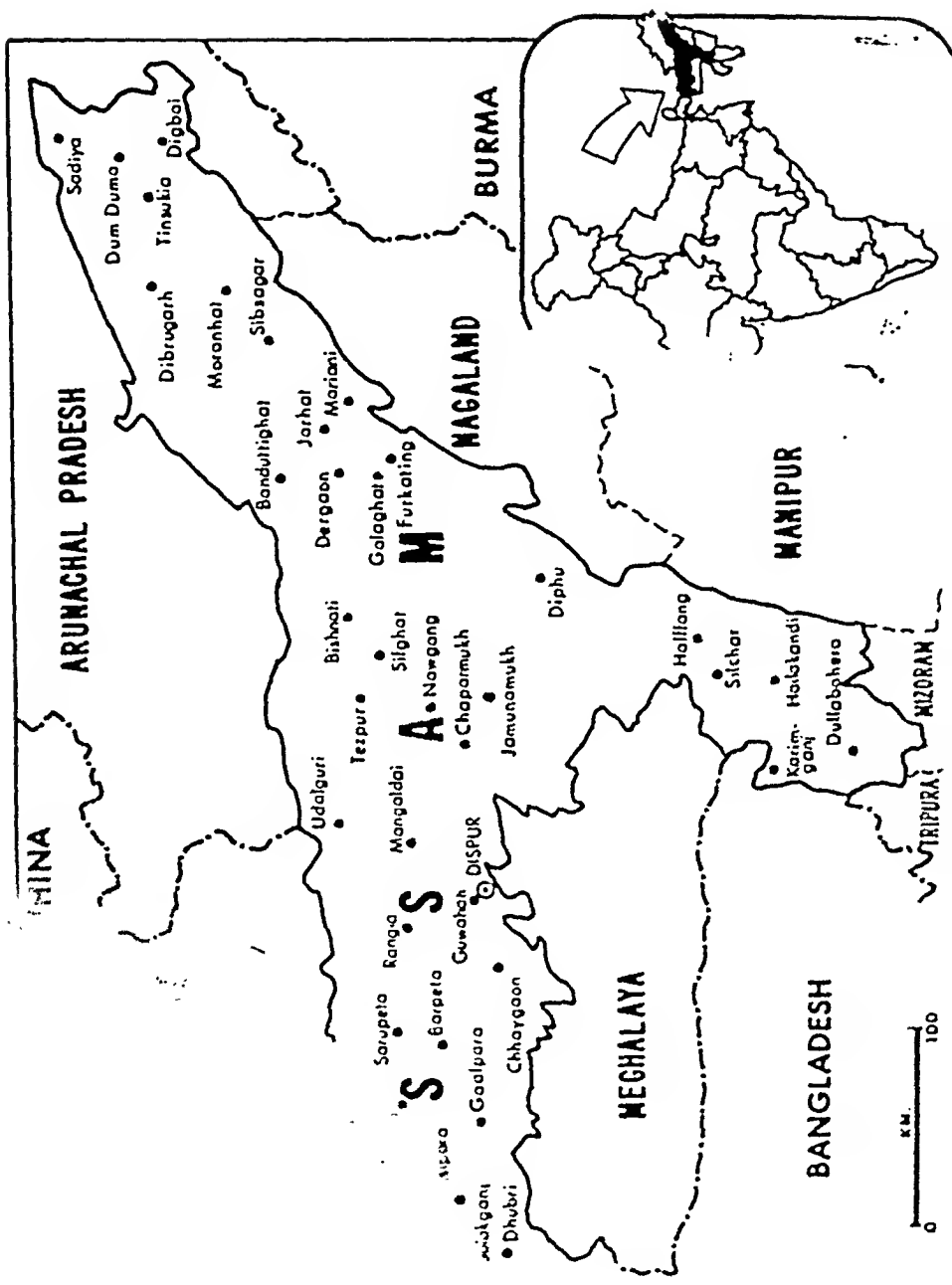
Important multipurpose irrigation schemes of
West Bengal include Damodar Valley, Mayurakshi,
Kangsabati and Subarnarekha Barrage. The irrigation
schemes are: Teesta-Mahananda link canal in
Jalpaiguri district, Terai and Tura irrigation
scheme in Purulia, Haldia irrigation scheme in
Birbhum district and Sahibganj scheme in Bardhaman
district.

Calcutta is the most important port besides
Haldia. Dum Dum near Calcutta is an international
airport. The other airports in the State are
Balurghat, Cooch Behar, Malda, Bagdogra,
Panaguri, Bhatnagar and Raipur.

STATES







STATES

MAHARASHTRA

MADHYA PRADESH

ORISSA

KARNATAKA

ANDHRA PRADESH

BAY OF BENGAL

TAMIL NADU

CHINA

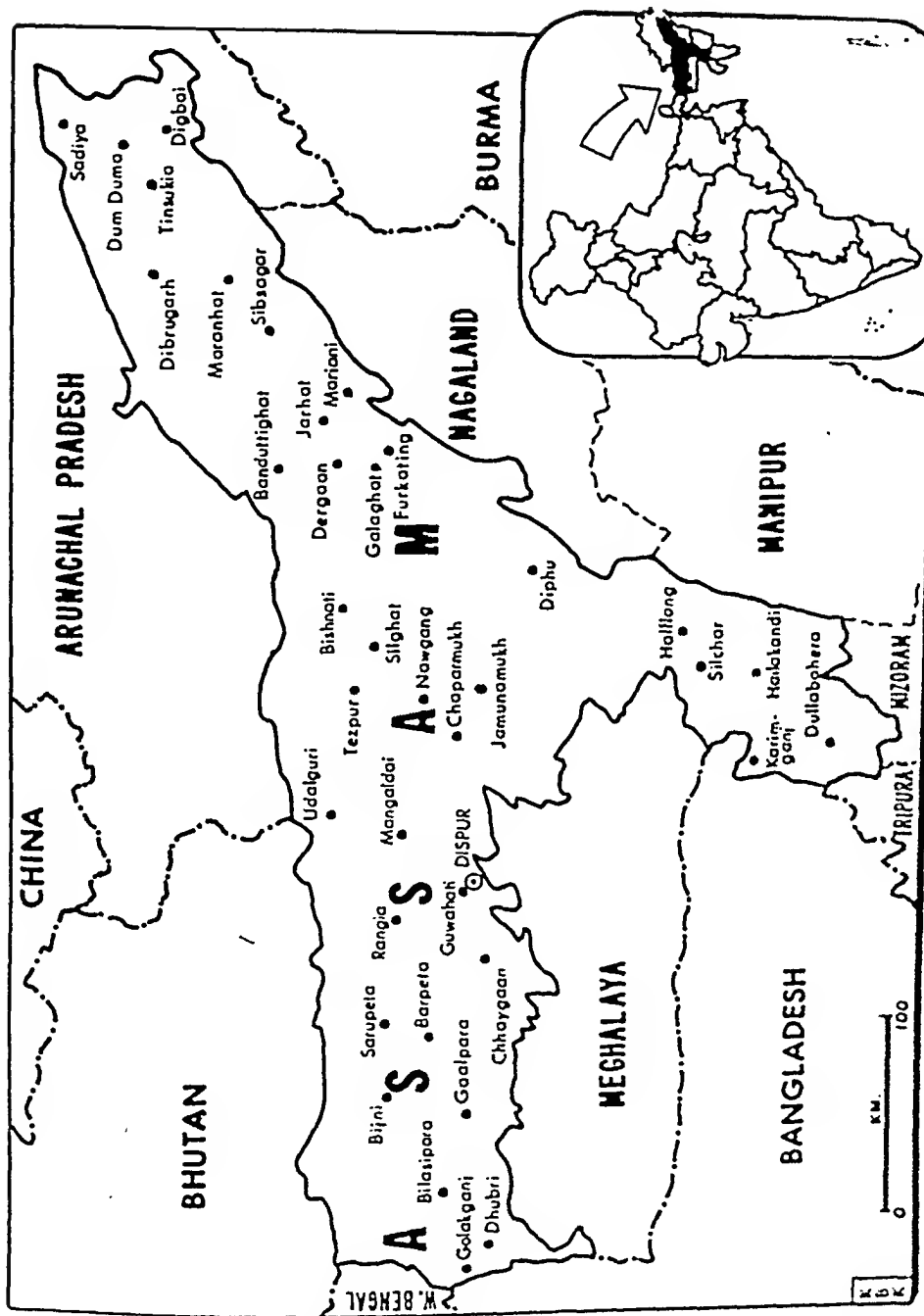
ARUNACHAL PRADESH

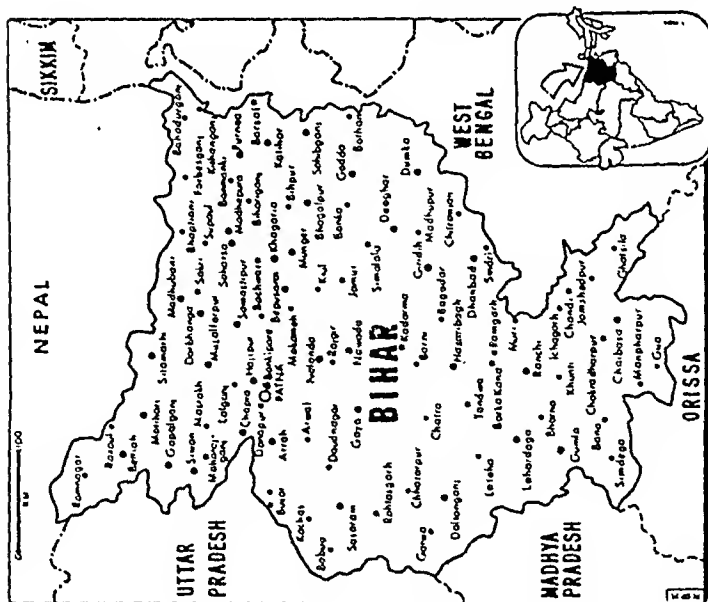
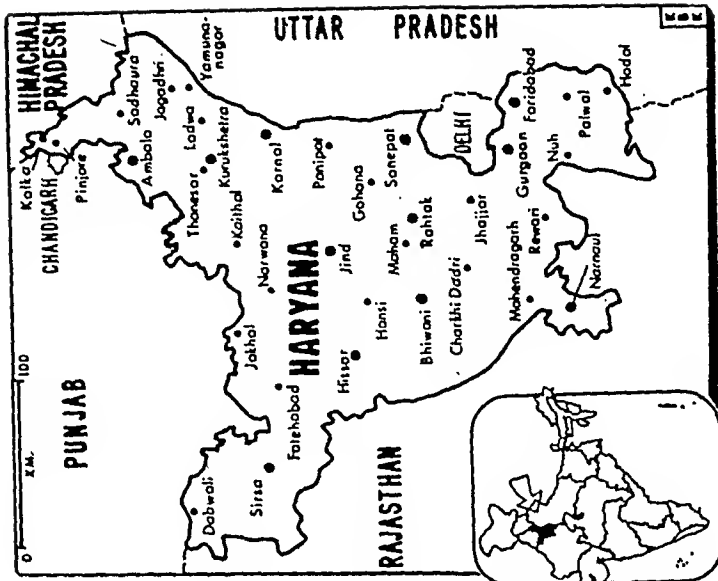
BHUTAN

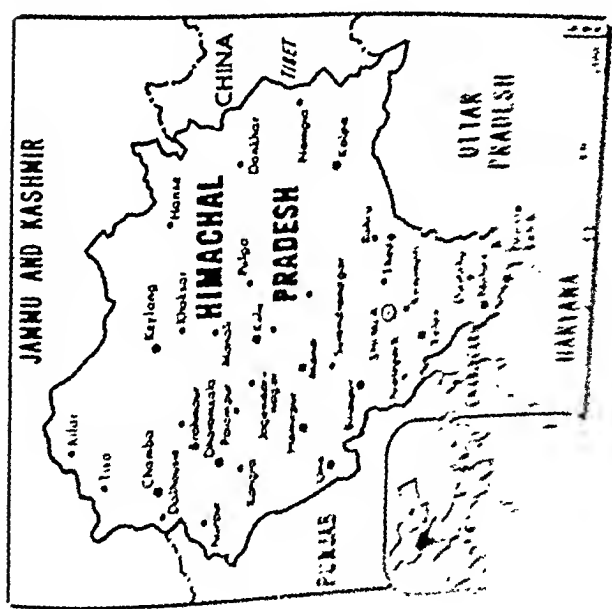
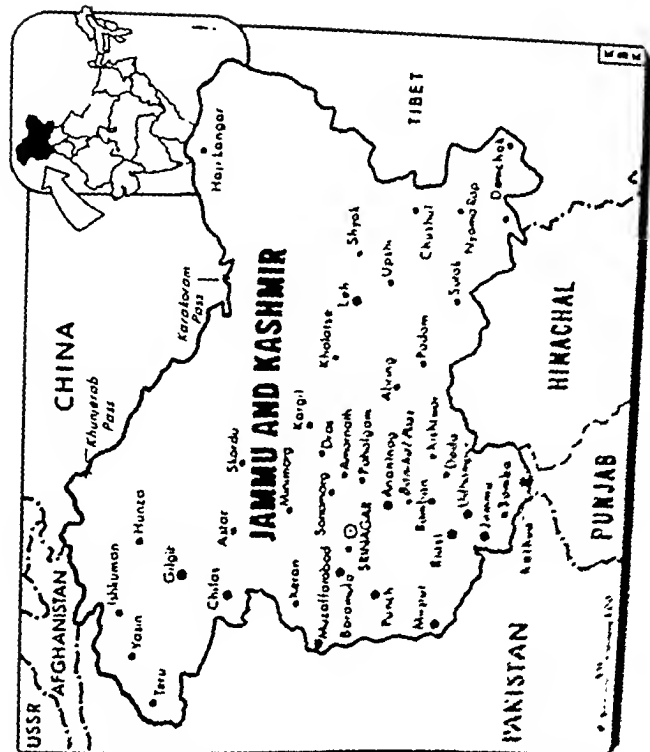
ASSAM

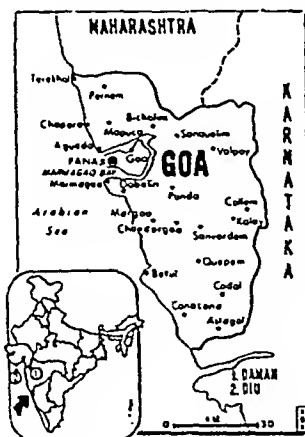
NAGALAND

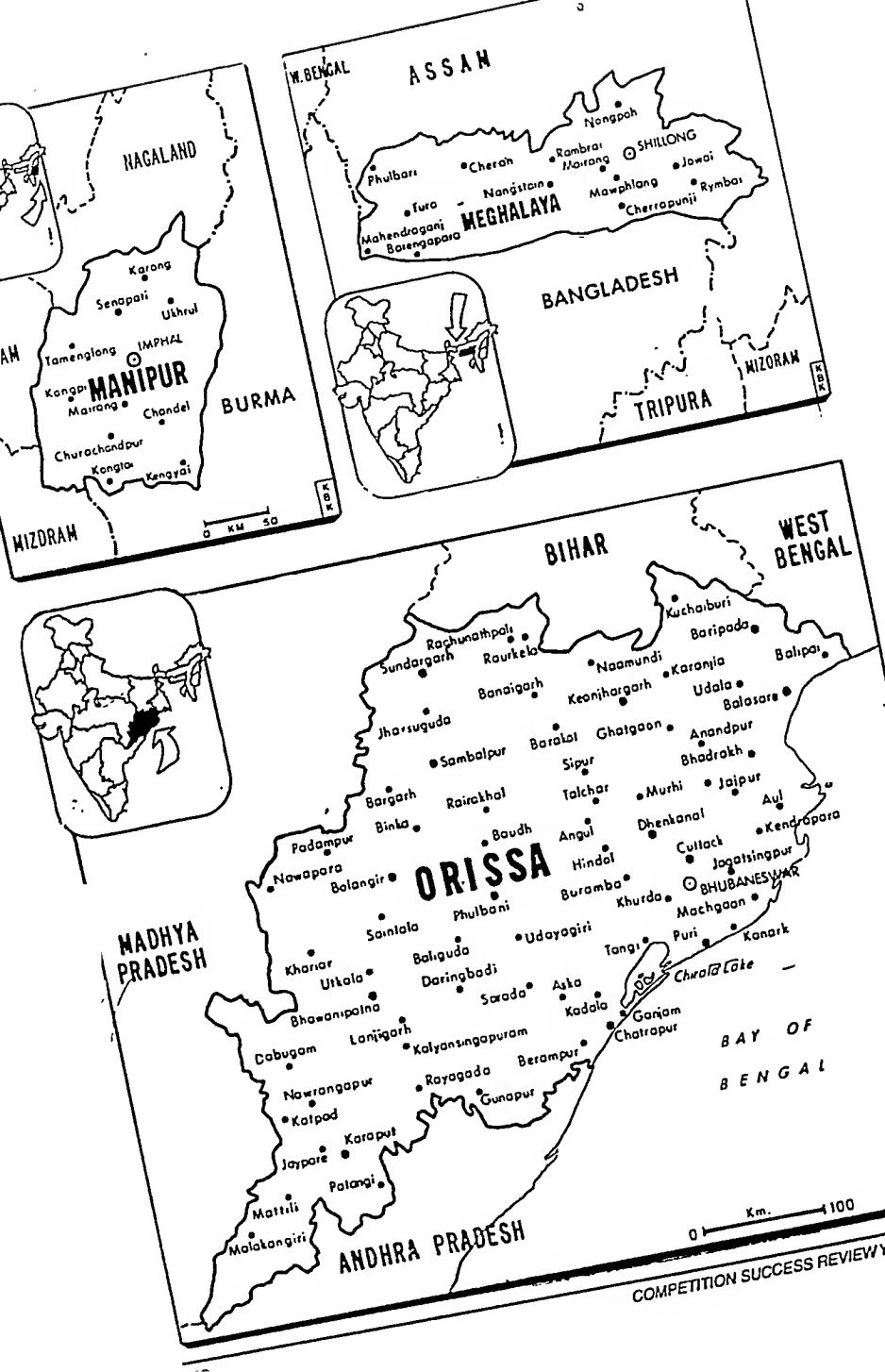
BURMA

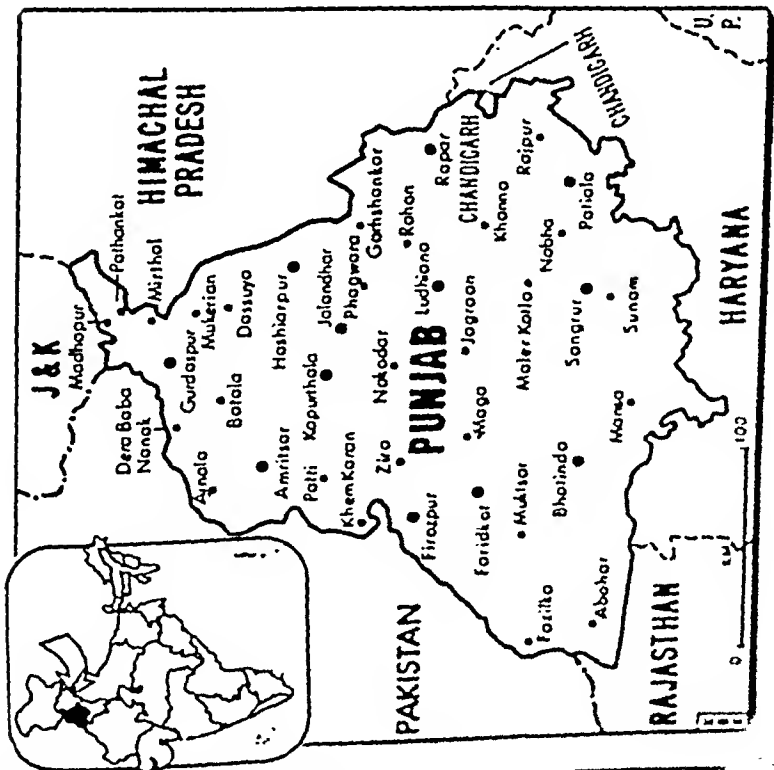
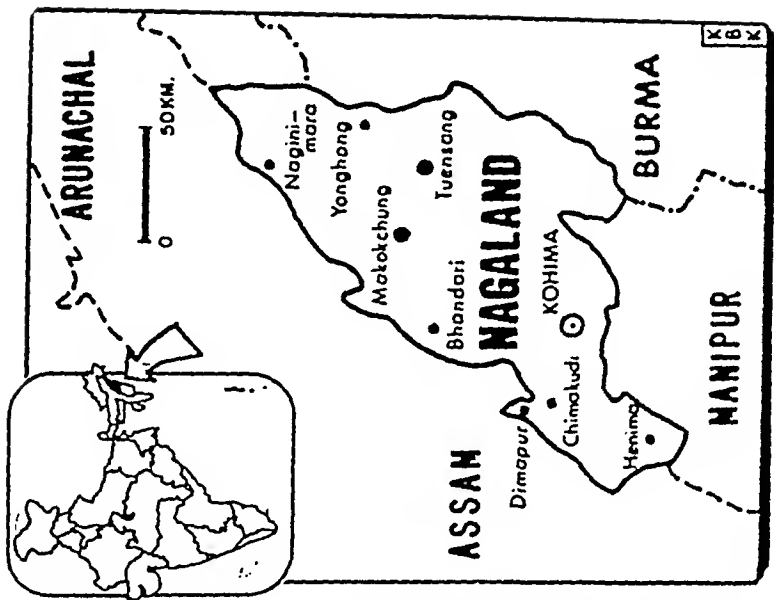




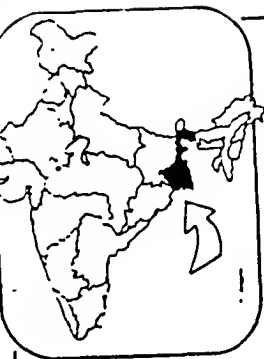




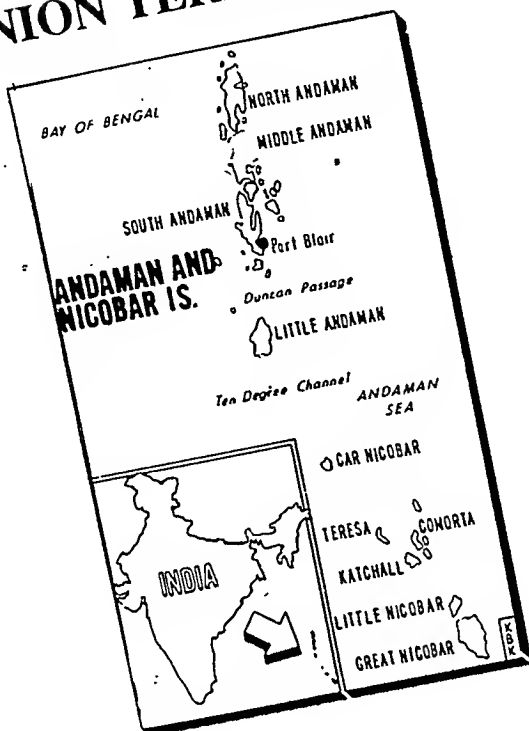








UNION TERRITORIES



NATIONAL CAPITAL TERRITORY OF DELHI

Area : 1,483 sq km
Population (1991 census) : 9,420,644; growth rate (1981-91) : 51.45%
Density per sq km : 6,352
Sex ratio (females per 1,000 males) : 827
Literacy rate : 75.29% (males : 82.01%; females : 66.99%)
Capital : Delhi
Legislature : Unicameral
Principal Languages : Hindi, Punjabi and Urdu

Important Religious/Tourist Places : Buddha Jayanti Park, Chandni Chowk, Connaught Place, Gurdwara Bangla Sahib, Gurdwara Rakab Ganj, Gurdwara Sis Ganj, Hauz Khas, Humayun's Tomb, India Gate, Jama Masjid, Jantar Mantar, Lal Qila (Red Fort), Lodi Tomb, Lotus Temple, Mahalakshmi Mandir (Birla Mandir), Mughal Gardens, National Museum, Nehru Memorial Museum, Parliament House, Purana Qila, Rabindra Rangshala, Rajghat (Mahatma Gandhi's samadhi), Rashtrapati Bhavan, Shanti Vana, Qutub Minar, Vijaya Ghat, Zoo.

Judicature : High Court at Delhi.

History : Delhi became a Union Territory on November 1, 1956. The territory forms an

enclave inside the eastern frontier of Haryana. It has boundaries with Uttar Pradesh also.

Economy : The principal food crops of Delhi are wheat, gram, rice, maize, bajra and jowar. Sugarcane, mustard, tobacco and chillies are the cash crops which are grown in small quantities. Emphasis has, however, now shifted from food crop to vegetable and fruit crops, dairy and poultry farming. Delhi ranks second in per hectare production of wheat in the country.

Steel castings, drugs and chemicals, paints and varnishes, television sets, radios, transistors, electrical appliances, scientific instruments, readymade garments and vegetable oil are the prominent industries of the Union Territory. Leather and rubber goods, pottery, textiles and tanning are also some of the other industries. The cottage industries comprise ivory works, gold and silver embroidery, brass and copperware.

Delhi has three airports. The Indira Gandhi International Airport is for international flights, Palam Airport for national air services and Safdarjung Airport for training purposes.

UNION TERRITORIES

ANDAMAN AND NICOBAR ISLANDS

Area : 8,249 sq km
Population (1991 census) : 280,661; growth rate (1981-91) : 48.70%
Density per sq km : 34
Sex ratio (females per 1,000 males) : 818
Literacy rate : 73.02% (males : 78.99%; females : 65.46%)
Capital : Port Blair
No. of Districts : 2
Legislature : None
Principal Languages : Bengali, Hindi, Nicobarese, Tamil, Telugu and Malayalam.

Important Cities, Towns and Religious/Tourist Places : Anthropological Museum, Carbyn's Cove Beach, Cellular Jail, Chattam Saw Mill, Chidia Tappu Burma Nalla, Cinque Island, Diglipur, Dithaman Tank (Water Sports), Jolly Buoy, Marine Museum, Mayabunder, Mount Harriet, National Memorial, Neil, Havelock, Rangat, Ross Island, Samudrika Naval Fisheries Museum, Shipplughat Water Sports Complex, Viper Island, Wandoor Beach.

Judicature : The Union Territory comes under the jurisdiction of Calcutta High Court, which has a circuit bench at Port Blair.

Location : The Andaman Islands lie in the Bay of Bengal 1,255 km from Calcutta and 1,195 km from Madras. The islands are 193 km from Cape Negrais in Burma. Five large islands grouped together are called the Great Andamans and to the south is the island of Little Andaman. There are some 204 islets, the two principal groups being the Ritchie Archipelago and the Labyrinth Islands. The total area is about 6,408 sq km. The Great Andaman group is about 467 km long and, at the widest, 51 km broad.

The Nicobar Islands are situated to the south of the Andamans, 121 km from Little Andaman. There are 19 islands, 7 uninhabited, with a total area of 1,841 sq km. The islands are usually divided into three sub-groups (southern, central and northern), the chief islands in each being, respectively, Great Nicobar, Camotra with Nancowrie and Car Nicobar. There is a fine landlocked harbour between the islands of Camotra and Nancowrie, known as Nancowrie Harbour.

History : Japanese forces occupied the Andaman Islands on March 23, 1942. Civil administration of the Islands was resumed on October 8, 1945. From 1857 to March 1942 the islands were used by the Government of India as a penal settlement for life and long-term convicts, but the penal settlement was abolished on reoccupation in October 1945.

The **Nicobar Islands** were occupied by the Japanese in July 1942. Car Nicobar was developed as a big supply base. The Japanese built some roads in Car Nicobar and small jetties at Malacca in Car Nicobar and in the harbour at Nancowrie. The Allies reoccupied the islands on October 9, 1945.

The Andaman and Nicobar Islands are administered by the President of India acting through a Lt.-Governor. The seat of administration is at Port Blair, which is connected with Calcutta (1,255 km) and Madras (1,195 km) by steamer service. Air service also operates from Calcutta.

Economy : Rice, coconut and arecanut are the principal crops of the Union Territory. Sugar, pulses, fruits and vegetables are the other crops. Cultivation of rubber and palm oil has also begun in Andaman and Nicobar Islands. Forests cover 7,130 sq km of the total area of Islands. Water around the Islands is rich in fish.

Bambooflat, Bakullala, Long Island, Haddu and Chattam are the centres of large scale industries. There are also medium and small scale industries in the Union Territory. The large scale industries are engaged in sawn timber, commercial plywood, match splints and veneers. The small scale and handicrafts units are engaged in shell crafts, furniture making, bakery products, coir products, rice milling, wheat grinding, oil seeds crushing, etc. The Union Territory is connected by air as well as sea from Port Blair.

CHANDIGARH

Area : 114 sq km
Population (1991 census) : 642,015; growth rate (1981-91) : 42.16%
Density per sq km : 5,632
Sex ratio (females per 1,000 males) : 790
Literacy rate : 77.81% (males : 82.04%; females : 72.34%)
Capital : Chandigarh
Legislature : None
Principal Languages : Hindi, Punjabi and English

Important Religious/Tourist Places : Bougainville Garden, Deer Park, International Dolls Museum, Leisure Valley, Log Hut (*Khudda Al-Sher*).

Museum and Art Gallery, National Gallery of Portraits, Panjab University Campus, Nek Chand's Rock Garden, Shanti Kunj, Smti Upavana, Sukhna Lake, Terraced Garden, Topiary Park, Zakir Rose Garden.

Judicature : The Union Territory comes under the jurisdiction of High Court of Punjab and Haryana at Chandigarh.

History : The city of Chandigarh and the area surrounding it was constituted as a Union Territory on November 1, 1966. It serves as the joint capital of Punjab and Haryana. Under the agreement between the Union Government and the Akali leaders in July 1985 Chandigarh is to become the exclusive capital of Punjab and Haryana has to develop its own capital in Haryana itself. The said agreement has not yet been implemented as the transfer of Hindi-speaking areas from Punjab to Haryana could not be carried out.

Economy : Fifty-two per cent of the total cultivated area is under irrigation. The major crops of Chandigarh are wheat, maize and paddy. Forests cover 27 per cent of the area.

Wool tops and yarn, hosiery, needles, electric meters, antibiotics and medicines, bicycle rims, bakery, chains and tree wheels, cardboard and steel furniture are the major industries of the Union Territory of Chandigarh. Chandigarh has an airport.

DADRA AND NAGAR HAVELI

Area : 491 sq km
Population (1991 census) : 138,477; growth rate (1981-91) : 33.57%
Density per sq km : 282
Sex ratio (females per 1,000 males) : 952
Literacy rate : 40.71% (males : 53.56%; females : 26.98%)
Capital : Silvassa
Legislature : None
Important Cities, Towns and Religious/Tourist Places : Silvassa, Van Vihar on Khanvel river, Van Ganga and Vandhara Gardens on Damanganga river, Bai Udyan, Tackeshwara temple on Sakardol river at Brindaban

Principal Languages : Gujarati and Hindi
Judicature : The Union Territory comes under the jurisdiction of Bombay High Court

Location : The Union Territory is located between Gujarat and Maharashtra. Vapi, located 15 km away from Silvassa, is the nearest railway station.

History : Under the 10th Amendment to the Constitution, the Portuguese territories of Dadra and Nagar Haveli became a centrally administered Union Territory with effect from August 11, 1961.

forming an enclave at the southernmost point of the border between Gujarat and Maharashtra. Formerly Portuguese, Dadra and Nagar Haveli were liberated by the Indian nationalist volunteers in July 1954 and a pro-India administration was formed.

Economy : For the Adivasis, who comprise 89 per cent of the total population of the Union Territory, agriculture is the main occupation. The major food crops are paddy, pulses and ragi. Wheat is also grown in some parts. Sugarcane is also coming out slowly. Mango, chiku, lichi and apple are also produced. Forests cover 40 per cent of the total area.

There are no major industries in Dadra and Nagar Haveli. The medium scale industries manufacture automobile parts, spectacle frames, cotton and art silk fabrics, nylon filaments, foam products, detergent powder, soap, biscuits, chemical engineering goods, candles, fruit juice, wrist watches, etc.

A multiple irrigation project at Damanganga is coming up in the Union Territory.

DAMAN AND DIU

Area : 112 sq km

Population (1991 census) : 101,586; growth rate (1981-91) : 28.62%

Density per sq km : 907

Sex ratio (females per 1,000 males) : 969

Literacy rate : 71.20% (males : 82.66%; females : 59.40%)

Capital : Daman

No. of Districts : 2

Principal Language : Gujarati

Important Cities, Towns and Religious/Tourist Places : **Daman**—Devka Beach, Hilsa Summer use, Jampore Beach, Kachigam, Nanf Daman etty Garden. **DiU**—Children's Park at Ghogla, Jallender Beach, Nagao Beach.

Judicature : The Union Territory comes under the jurisdiction of Mumbai High Court.

Location : Daman lies on the Gujarat coast, 160 km north of Mumbai, while Diu lies off the south-east coast of Kathiawar in Gujarat. The two are located on the west coast of India in the Arabian Sea.

History : Daman and Diu were captured by the Portuguese in 1531 and 1534 respectively and, together with Goa, remained in their hands until December 1961 when they were liberated. For 25 years thereafter Daman and Diu continued to be governed from Goa.

When Goa attained Statehood on May 30, 1987, the little known coastal town of Daman,

along with Diu, became a Union Territory thus getting an opportunity to govern itself for the first time in four centuries.

Tribal people form 10 per cent of Daman's population. They belong to four major communities—Doble, Dhodia, Halpati and Dhedha. They are not economically well off or secured as they depend for their livelihood on agriculture which is susceptible to the vagaries of nature.

Economy : Paddy, wheat, ragi, bajra, jawar, groundnuts, pulses and beans are the important crops. There are no major forests in the Union Territory.

Small scale industrial units manufacture readymade garments, wooden furniture, paperboard boxes, rubber components, washing soap, pumps, valves, etc.

LAKSHADWEEP

Area : 32 sq km

Population (1991 census) : 51,707; growth rate (1981-91) : 28.47%

Density per sq km : 1,616

Sex ratio (females per 1,000 males) : 943

Literacy rate : 81.78% (males : 90.18%; females : 72.89%)

Capital : Kavaratti

Legislature : None

Principal Language : Malayalam

Important Cities, Towns and Religious/Tourist Places : Agatti, Amini, Andrott, Bangaram, Bitra, Cheriya, Chellat, Kadmat, Kalpeni, Kavaratti (headquarters town), Kiltan, Minicoy, Suhell, Tinakara, Veliyakara.

Judicature : The Union Territory comes under the jurisdiction of Kerala High Court.

History : Lakshadweep consists of a group of 27 islands, of which 10 are inhabited, and located about 300 km off the west coast of Kerala. It was constituted a Union Territory in 1956 as the Laccadive, Minicoy and Amindivi Islands, and renamed in November 1973. The total area of the islands is 32 sq km. The northern portion is called the Amindivis. The remaining islands are called the Laccadives (including Minicoy Islands). Andrott is the largest island, 4.8 sq km, and is nearest to Kerala.

Economy : The only major crop of Lakshadweep is coconut. Besides, there are dairies and poultry farms. Fishing is the main industry. Tuna and shark varieties of fish are largely available in the sea around the islands which is highly productive. Lakshadweep now stands first in the country in the per capita availability of fish which is much higher than any other area in the country. The

cottage industries comprise the coir spinning and coir yarn production.

PONDICHERY

Area : 492 sq km
Population (1991 census) : 807,785; growth rate (1981-91) : 33.64%
Density per sq km : 1,642
Sex ratio (females per 1,000 males) : 979
Literacy rate : 74.74% (males : 83.68%; females : 65.63%)
Capital : Pondicherry
No. of Districts : 4
Legislature : Unicameral
Principal Languages : Tamil, Telugu, Malayalam, English and French.

Important Cities, Towns and Religious/Tourist Places : Karaikal (former French colony), Mahe (former French dependency), Pondicherry (former French colony famous for Auroville, Beach, Bharathiar and Bharathidasan Memorials, Boat Club at Chunnambur river, Botanical Garden, French Institute, Government Square, Joan of Arc, Manakula Vinayagar Temple, Pondicherry Museum, Sacred Heart of Jesus Church, Sri Aurobindo Ashram), Yanam (former French enclave).

Judiciary : The Union Territory comes under the jurisdiction of Chennai High Court.

History : Formerly the chief French settlement in India, Pondicherry was founded by the French in 1674, taken by the Dutch in 1693 and restored to the French in 1699. The English took it in 1761, restored it in 1765, re-took it in 1778, restored it

a second time in 1785, re-took it a third time in 1793 and finally restored it to the French in 1814. Administration was transferred to India on November 1, 1954. A Treaty of Cession (together with Karaikal, Mahe and Yanam) was signed on May 28, 1956. Following signing of instruments of ratification on August 16, 1962, Pondicherry, comprising the four territories, became a Union Territory under the 14th amendment of the Indian Constitution.

The territory forms an enclave on the Coromandel coast of Tamil Nadu. It consists of four non-contiguous settlements, viz., Pondicherry, Karaikal, Mahe and Yanam. The first three are on the sea coast, two of them on the east coast and the third on the west. The fourth is located in the east coast delta.

Economy : For nearly 45 per cent of the people of Pondicherry, agriculture is the main occupation. This sector accounts for 50 per cent of the Union Territory's income. About 90 per cent of the total cultivated area is under irrigation. Rice is the principal food crop. Jowar, bajra, pulses and ragi are grown in small quantities. The main cash crops are sugarcane, groundnut and cotton. There are no forests.

The medium and large industries consist of six textile mills, two sugar mills, one caustic soda plant, two ceramic glazed tiles manufacturing units and the Government distillery at Pondicherry. The small scale units include electrical appliances, camphor, leather goods, wooden articles, electronic items, plastics, stool furniture and bicycle parts.

17. Internal Security

POLICE

Police is a State subject under the Constitution and, therefore, police in India is maintained and controlled by the States. The head of police force in a State is the Director General of Police or Inspector General of Police. For police administration each State is divided into convenient territorial divisions called ranges and each police range is under the administrative control of a Deputy Inspector General of Police. Each range is divided into districts under the charge of a Superintendent of Police. The district police is further subdivided into police divisions, circles and police stations.

The police set-up in big cities like Delhi, Calcutta, Mumbai, Chennai, Bangalore, Hyderabad,

Ahmedabad and Nagpur is directly under a Commissioner of Police, who enjoys magisterial powers.

All senior police posts in various States are included in the Indian Police Service (IPS) cadre to which recruitment is made on an all India basis. Recruitment, promotion and cadre control in respect of the lower posts from Police Constables up to Deputy Superintendent of Police are done by the State Governments themselves.

Ministry of Home Affairs is the cadre controlling authority for the Indian Police Service. It looks after service matters like appointment to IPS, deputation to the Centre, training, fixation of seniority, pay etc.

The Home Ministry also administers the National Security Guards (NSG) which is a specialised

force to counter terrorism, and the Central Industrial Security Force (CISF) which is deployed in the public sector undertakings to perform protective and preventive duties.

ASSAM RIFLES

Assam Rifles is the oldest para-military force in the country. The force, comprising more than fifty-two thousand men, is headed by the Director General, Assam Rifles and has its headquarters at Shillong. The Assam Rifles is charged with the responsibility of maintaining security and vigilance on India's north-eastern borders, countering insurgency operations in such areas as Arunachal Pradesh, Manipur, Mizoram and Nagaland, guarding India's borders with China and Myanmar and assisting the civil administration in maintenance of law and order during disturbed conditions.

CENTRAL BUREAU OF INVESTIGATION

Central Bureau of Investigation (CBI) was created in April 1963. Prior to that this organisation was known as Special Police Establishment which was created and functioned under the Delhi Special Police Establishment Act, 1946. CBI through its Special Police Establishment Division is the principal investigating agency of the Central Government and is concerned with the investigation cases of government servants, big cases of fraud, cheating and embezzlement and other cases when committed by organised gangs or professional criminals. CBI derives its power to investigate offences mentioned above from the Delhi Special Police Establishment Act, 1946. CBI indexes criminals involved in international crimes and verifies finger prints from various foreign national crime bureaux.

INDO-TIBETAN BORDER POLICE

In October 1962, in the wake of Chinese aggression, need was felt for an integrated unconventional guerilla-cum-Intelligence-cum-lighting force meant to operate primarily in the inhospitable, wild and vertical world of Himalayas and ITBP force was raised with barely four battalions, to begin with.

This force has been charged with the responsibility of ensuring the security of northern border, instilling a sense of security among the

people living in the border areas and preventing transborder crimes, smuggling and unauthorised entry into or exit from Indian territory in coordination with other security forces.

The force is headed by a Director General with headquarters in New Delhi. It consists of 2 service battalions, four specialist battalions, three training centres, central record office, clerical training school, Base Hospital and six sector headquarters each headed by a DIG.

NATIONAL SECURITY GUARDS

To meet the emerging threats of terrorism in the country, National Security Guard (NSG) has been set up for handling terrorists, kidnappers, saboteurs, anti-hijacking operations, recovery of hostages, V.I.P. security etc. It is a highly trained and motivated force for effectively dealing with the terrorist activities. It also trains state police commandos to upgrade their capability to meet the terrorist threats and carry out bomb detection and defusion operations. This force has so far carried out 85 operations in various parts of country and its motto is 'SARVATRA SARVOTAM SURAKSHA'.

CENTRAL RESERVE POLICE FORCE

The Central Reserve Police Force (CRPF) was raised in 1939 at Neemuch, Madhya Pradesh. It was then known as the Crown Representative police and after independence it was renamed as CRPF. It is headed by a Director General, with its headquarters at Delhi. Its duties include assisting the State/Union Territory Police Forces in the maintenance of law and order and arranging relief at the time of natural calamities. During an external aggression, the CRPF is deployed for operations under Army control. The CRPF now has 123 battalions and its personnel are largely deployed in Punjab and Jammu & Kashmir to fight terrorism. It has also an exclusive Mahila (women) battalion.

BORDER SECURITY FORCE

The Border Security Force (BSF), which was raised in December 1965, is charged with the task of maintaining permanent vigilance on India's international borders. Its functions are: to promote a sense of security among the people living in the border areas; to prevent trans-border crimes.

unauthorised entry into or exit from the territory of India; and to prevent smuggling and any other illegal activity. In addition, the Force during the period of war has a supplementary role with the Army and functions directly under the operational control of the Army. Being an armed force, BSF units are called upon to undertake various internal security duties and are also employed in aid to civil administration.

With headquarters at Delhi, the BSF is headed by a Director General. It also maintains adequate liaison with other forces operating in the border area.

Besides these, a special force called the 'National Security Guard' has been raised to meet the emergent threats of extremism and terrorism including hijacking. A Central Industrial Security Force has also been raised and employed in public sector undertakings to prevent theft, damage and terrorist threats to their installations.

CIVIL DEFENCE

Civil Defence aims at saving the lives of the population and maintaining continuity of production and movement of property in the event of hostilities. It also seeks to maintain morale of the people in such situations. Members of the Civil Defence Corps also render assistance during natural calamities like floods and earthquakes on a voluntary basis.

HOME GUARDS

Home Guards is a voluntary force raised by the State Governments and Union Territory Administrations under a broad pattern laid down by the Ministry of Home Affairs. It is a country wide organisation and its members are drawn from all walks of life. Besides attending to their normal avocations, the Home Guards place their services voluntarily at the disposal of the authorities to assist the civil administration and the community at large.

18. Defence

ARMED FORCES

The supreme command of the Armed Forces is vested in the President of India. The responsibility for national defence, however, rests with the Cabinet. All important questions having a bearing on defence are decided by the Cabinet Committee on Political Affairs, which is presided over by the Prime Minister. The Defence Minister is responsible to Parliament for all matters concerning the Defence services. The administrative and operational control of the Armed Forces is exercised by the Ministry of Defence and the three services headquarters of the Army, Navy and Air Force. The three services—Army, Navy and Air Force—function through their respective service headquarters headed by Chief of Staff.

ARMY

The Army is led by the Chief of the Army Staff, with Army Headquarters at New Delhi, assisted by the Vice-Chief of Army Staff and seven other Principal Staff Officers, including two Deputy Chiefs of Army Staff, Adjutant General, Quarter-Master General, Master General of Ordnance, Military Secretary and Engineer-in-Chief. The Army is organised into six Commands—Western, Eastern, Northern, Southern, Central and Training—each under a General Officer Commanding-in-Chief of the rank of a full

General. He is the Commander of a designated geographical area and has both tactical and strategic formations under his command. The headquarters of a number of battalions and regiments, including formations of the Army Air Corps, are raised as Brigades, commanded respectively by a Brigadier General, Colonel General and a Major General, respectively. The major units of the Army are divided into three independent branches, viz. Infantry, Armoured and Artillery, each headed by a General Officer Commanding-in-Chief of the rank of a Brigadier. The Infantry is divided into three commands of Brigades, each headed by a Brigadier.

Tank Fleet

The Tank Fleet is a part of the Armoured Corps, which is a part of the Infantry.

The Tank Fleet is a part of the Armoured Corps, which is a part of the Infantry.

NAVY

The Navy is a part of the Armed Forces, which is a part of the Defence services.

COMMISSIONED RANKS

The following are the commissioned ranks in the three services; each rank is shown opposite to its equivalent in the other services.

Army	Navy	Air Force
General	Admiral	Air Chief Marshal
Lieutenant-General	Vice-Admiral	Air Marshal
Major-General	Rear Admiral	Air Vice-Marshal
Brigadier	Commodore	Air Commodore
Colonel	Captain	Group Captain
Lieutenant-Colonel	Commander	Wing Commander
Major	Lieutenant-Commander	Squadron Leader
Captain	Lieutenant	Flight Lieutenant
Lieutenant	Sub-Lieutenant	Flying Officer
Second Lieutenant	Acting Sub-Lieutenant	Pilot Officer

shore assets and the sea threats in our economic zones, both in times of war and peace. The Navy is being modernised with a view to discharge responsibilities in defending our sea frontiers, through acquisition from abroad and indigenous sources.

The Navy is organised into three Naval Commands under Flag Officers Commanding-in-Chief. These are: (1) Western Naval Command, Mumbai, (2) Eastern Naval Command, Visakhapatnam and (3) Southern Naval Command, Cochin. The Navy has two Fleets—the Western Fleet and the Eastern Fleet. The two Fleets consist of the aircraft carriers, destroyers, a number of frigate squadrons, including some of the latest types of anti-submarine and anti-aircraft frigates, a squadron of anti-submarine patrol vessels, one mine-sweeping squadron, submarines, a submarine depot ship and fast vessels carrying surface-to-surface guided missiles. The Navy has a sizeable air wing with various types of fixed wing aircraft and helicopters. Besides, there are some survey ships, training ships, fleet tankers, landing crafts and a number of auxiliary craft.

Naval Fleets

There are two fleets, the Western and Eastern fleets, consisting of two air craft carriers, viz:

INS Vikrant: India's oldest aircraft carrier which was decommissioned on Jan. 31, 1997.

INS Viraat: It is the largest aircraft carrier which was commissioned in 1987.

Submarines

INS Chakra: It was India's first nuclear powered submarine which was on lease from the former USSR and has now been decommissioned.

INS Shalki: It is the first indigenously built submarine which was commissioned in February 1992.

INS Shahkul: It is the second submarine in the H1W series, which was launched on March 21, 1992.

Missile Boats

INS Vindhya: It is India's first indigenously built missile boat which was launched on April 26, 1991 at the Mazagaon Docks, Mumbai.

INS Vipul: It is the second missile boat built in the Mazagaon Docks, Mumbai in collaboration with Russia and was commissioned in 1992. It consists of surface-to-surface and surface-to-air missiles.

INS Nashik: It is the country's third missile boat built at the Mazagaon Docks. It was launched in November 1993.

Warships

INS Savitri: It is India's first warship fabricated at the Hindustan Shipyard Limited, which joined the Indian Navy in 1990.

INS Delhi: The Indian Navy's largest and the most sophisticated, indigenously fabricated warship.

INS Ghazipur: The indigenously built warship was commissioned into the Indian Navy on March 14, 1997.

INS Prahar: The fastest missile boat in the world built by Goa Shipyard Ltd. was inducted into the Indian Navy in 1997.

AIR FORCE

The Indian Air Force is led by the Chief of the Air Staff with headquarters at New Delhi. He is assisted by six Principal Staff Officers, namely, Vice-Chief of Air Staff, Deputy Chief of Air Staff, Air Officer Incharge Administration, Air Officer Incharge Maintenance, Air Officer Incharge Personnel and Inspector General Flight Safety.

and Inspection. The Air Force is organised into seven Commands: (1) Western Air Command, (2) South Western Air Command, (3) Central Air Command, (4) Eastern Air Command, (5) Southern Air Command, (6) Training Command, and (7) Maintenance Command. The last two are the functional Commands.

Combat Force: The Air Force combat fleet, which is made up of 45 squadrons, consists of a variety of fighters, fighter-bombers, fighter interceptors, bombers and transport and logistics support aircraft. Among the fighter aircraft are SU-7s, Hunters, Ajeets, MiG-21s, MiG-23s, MiG-25s, MiG-27s, Jaguars and HF-24s. Canberras comprise the bomber fleet. A new combat aircraft, Jaguar, has been inducted into IAF to replace Hunters and Canberras.

In keeping with the on-going process of phasing out obsolescent systems and re-equipment of combat squadrons with the latest high technology systems, MiG-29 aircraft have been added to the inventory of combat aircraft. Vajra (Mirage-2000) aircraft have also been inducted into the AIF. These two are the present generation air defence aircraft.

India has also designed and developed a pilotless target aircraft Lakshya and made successful test flight of its unmanned air vehicle (UAV) designed to perform discreet aerial reconnaissance of battlefield including target acquisition. The test flights of UAV, named *Nishant*, were conducted on August 20 and 21, 1996 at Kolar, near Bangalore.

The successful flight-testing of *Nishant* demonstrates the skills and confidence which Indian scientists and engineers have acquired in handling high technology and pressing it into the country's service. *Nishant* will perform aerial reconnaissance of the battlefield to locate targets at long distances behind enemy lines. After completion of a series of trials to enable the commencement of production, *Nishant* is expected to be inducted into the Army in 1998.

The Defence Research and Development Organisation (DRDO) had previously successfully designed and developed *Lakshya*, the pilotless target aircraft (PTA) which has already gone into limited serial production. The PTA was developed by the Aeronautical Development Establishment at Bangalore. It is intended for use by all the three defence services for target tracking and for certain tactical uses.

Transport Fleet: The transport fleet consists of IL-76s, AN-32, Boeing 737 and indigenously produced HS-748, "Domier"-228 has replaced the latter aircraft.

Helicopter Fleet: The helicopters in use are Mi8s, Mi-17, Cheetahs and Chetak. Modern heavy lift Mi-26 helicopters have been inducted into the IAF to meet the requirements at bases at high altitudes. The force has Mi-25s and Mi-35s which are used as attack helicopters. HUT-16 (Karan) and Iskara aircrafts are used as trainers. HS-743 is used as transport aircraft trainer. Mi-8 helicopters undertake tasks in Antarctica. Mi-17 and Chetak are used for high altitude operations.

The Indian Air Force observed its Golden Jubilee in 1982. In 1932 the Indian Air Force began with four Western Wapiti aircraft in Karachi (now in Pakistan).

TERRITORIAL ARMY

Established in 1949, the Territorial Army was constituted under the Territorial Army Act, 1948. It is a voluntary part-time citizens' force consisting of persons who are not professional soldiers but civilians who wish to play a useful role in the defence of the country. It provides an opportunity to citizens to receive military training in their spare time so that they can be called upon to assist during situations arising out of natural calamities, disruption of essential services or threats to national security. They are, however, not required to perform military service outside India. All able bodied nationals of India between the age of 18 and 35 years (with age relaxation in the case of technical units) and possessing the requisite qualifications are eligible to join the Territorial Army.

NATIONAL CADET CORPS

The National Cadet Corps (NCC) was established in 1948. It consists of three divisions - for Senior, Junior and Girls, and is composed of students of educational institutions and is the premier scheme of youth activity. The training programme of the cadets has a defence bias. The students are trained in handling arms, learning the basic functions of Defence Services personnel and working for short periods in camps under discipline. Participation in the NCC is entirely voluntary. The objectives of the NCC are to stimulate interest among the youth in the defence of the country so as to build up a reserve of army, air force and the Armed Forces (expanding to three) and build up the character of the youth and to give them the opportunity to become discipline oriented. Cadets also participated in various social and cultural activities and render voluntary service in the community. A certain percentage of the NCC cadets are selected for training in the Army.

CHIEFS OF ARMY STAFF

Name	Tenure
General Maharaja Rajendra Singhji	1 April 1955 – 14 May 1955
General S.M. Srinagesh	15 May 1955 – 7 May 1957
General K.S. Thimayya	8 May 1957 – 7 May 1961
General R. N. Thapar	8 May 1961 – 19 Nov. 1962
General J.N. Choudhuri	20 Nov. 1962 – 7 June 1966
General P.P. Kumaramangalam	8 June 1966 – 7 June 1969
General S.H.F.J. Manekshaw	8 June 1969 – 31 Dec. 1972
Field Marshal S.H.F.J. Manekshaw	1 Jan. 1972 – 15 Jan. 1973
General G.G. Bewoor	16 Jan. 1973 – 31 May 1975
General T.N. Raina	1 June 1975 – 31 May 1978
General O.P. Malhotra	1 June 1978 – 31 May 1981
General K.V. Krishna Rao	1 June 1981 – 31 July 1983
General A.S. Vaidya	1 Aug. 1983 – 31 Jan. 1986
General K. Sundarji	1 Feb. 1986 – 30 April 1988
General V.N. Sharma	1 May 1988 – 30 June 1990
General S.F. Rodrigues	1 June 1990 – 30 June 1993
General Bipin Chandra Joshi	1 July 1993 – 18 Nov. 1994
General Shankar Roy Chowdhury	23 Nov. 1994 – 30 Sept. 1997
General V.P. Malik	1 Oct. 1997 – Till Date

CHIEFS OF NAVAL STAFF

Vice-Admiral R.D. Katari	22 April 1958 – 4 June 1962
Vice-Admiral B.S. Soman	5 June 1962 – 3 Mar. 1966
Admiral A.K. Chatterjee	4 Mar. 1966 – 27 Feb. 1970
Admiral S.M. Nanda	28 Feb. 1970 – 28 Feb. 1973
Admiral S.N. Kohli	1 Mar. 1973 – 28 Feb. 1976
Admiral J.L. Chursetil	1 Mar. 1976 – 28 Feb. 1979
Admiral R.L. Pereira	1 Mar. 1979 – 28 Feb. 1982
Admiral O.S. Dawson	1 Mar. 1982 – 30 Nov. 1984
Admiral R.H. Tahiltani	1 Dec. 1984 – 30 Nov. 1987
Admiral J.G. Nadkarni	1 Dec. 1987 – 30 Nov. 1990
Admiral Laxinarayan Ramdas	1 Dec. 1990 – 30 Sept. 1993
Admiral V.S. Shekhawat	1 Oct. 1993 – 30 Sept. 1996
Admiral Vishnu Bhagwat	1 Oct. 1996 – 30 Dec. 1998
Admiral Sushil Kumar	30 Dec. 1998 – Till Date

CHIEF OF AIR STAFF

Air Marshal Sir Thomas Elmirst	15 Aug. 1947 – 21 Feb. 1950
Air Marshal Sir Ronald Lylelaw Chapnam	22 Feb. 1950 – 9 Dec. 1951
Air Marshal Sir Gerald Gibbs	10 Dec. 1951 – 31 Mar. 1954
Air Marshal S. Mukherjee	1 April 1954 – 8 Nov. 1960
Air Marshal A.M. Engineer	1 Dec. 1960 – 31 July 1964
Air Chief Marshal Arjan Singh	1 Aug. 1964 – 15 July 1969
Air Chief Marshal P.C. Lal	16 July 1969 – 15 Jan. 1973
Air Chief Marshal O.P. Mehra	16 Jan. 1973 – 1 Feb. 1976
Air Chief Marshal H. Moolgavkar	1 Feb. 1976 – 31 Aug. 1978
Air Chief Marshal I.H. Lalit	1 Sept. 1978 – 31 Aug. 1981
Air Chief Marshal Dilbagh Singh	1 Sept. 1981 – 3 Sept. 1984
Air Chief Marshal L.M. Katra	4 Sept. 1984 – 1 July 1985
Air Chief Marshal D.A. La Fontaine	3 July 1985 – 31 July 1988
Air Chief Marshal S.K. Mehra	1 Aug. 1988 – 30 July 1991
Air Chief Marshal N.C. Suri	31 July 1991 – 30 July 1993
Air Chief Marshal S.K. Kaul	31 July 1993 – 31 Dec. 1995
Air Chief Marshal S.K. Sarin	1 Jan. 1996 – 31 Dec. 1998
Air Chief Marshal A.Y. Tipnis	31 Dec. 1998 – Till Date

Navy and Air Force, on the basis of direct entry to the Armed Forces training institutions, is reserved for NCC cadets of the three Services.

COAST GUARD ORGANISATION

The Coast Guard was constituted as an Armed Force of the Union under the Coast Guard Act, 1978, to protect the maritime and other national interests in the maritime zones of India covering an area of about 28 lakh square kilometres. More specifically, the duties of the Coast Guard Organisation include: (a) protection of maritime and other national interests in the maritime zones; (b) ensuring the safety and protection of offshore installations, terminals, etc.; (c) providing protection to fishermen, including assistance to them at sea while in distress; (d) protection of the maritime environment and control of marine pollution; (e) assisting the Customs in anti-smuggling activities; (f) enforcing the provisions of such enactments as are for the time being in force in the maritime zones of India; (g) taking measures for the safety of life and property at sea; and (h) collection of scientific data.

DEFENCE PRODUCTION

The country is self-sufficient in respect of a number of weapons and is at present manufacturing Vijayantha tanks, Shaktimaan army trucks, MiG fighter aircraft, helicopters, Leander class frigates and other equipments. Continuous efforts are being made to modernise the Armed Forces and keep them afresh with the latest equipment.

DEFENCE PRODUCTION UNITS

1. Hindustan Aeronautics Limited (HAL)

It was established in 1964 and has 12 factories located at:

Bangalore (five factories), Koraput, Nasik, Kanpur, Lucknow, Barrackpur, Hyderabad
HAL has now undertaken production of MiG-27 aircraft

2. Bharat Electronics Limited (BEL)

It was established in 1954 and has nine factories, including the new units which are located at:

Bangalore, Ghaziabad, Pune, Machilipatnam, Talaja (Maharashtra), Panchkula (Haryana), Kottawara (Uttar Pradesh), Hyderabad, Chennai.

BEL manufactures low and high power communication equipment like radars, etc.

3. Bharat Earth Movers Limited (BEML)

It was established in 1964 and has three factories located at Bangalore, Mysore and Kolar gold fields, where heavy equipment such as

bulldozers, dumpers, loaders, cranes, etc., are manufactured.

4. Bharat Dynamics Limited (BDL)

It was established in 1970 and is located at Hyderabad to manufacture guided missiles.

5. Ship-building Factories

(i) Mazagon Dock Limited (MDL), Mumbai, is engaged in ship-building.

(ii) Garden Reach Shipbuilder and Engineering Limited (GRSE), Calcutta

(iii) Goa Shipyard Limited (GSL) was established in 1957 under the Portuguese rule and taken over in 1961.

6. Mishra Dhatu Nigam Limited (MIDHANI)

MIDHANI was established in 1973 and has a factory at Hyderabad. They manufacture sophisticated and strategic special metals and alloys required by sectors like Nuclear Energy, Aeronautics, Space, etc.

Other Defence Production Units are

(i) Praga Tools, Hyderabad

(ii) Heavy Vehicles Factory, Avadi.

MILITARY TRAINING CENTRES

National Defence Academy, Khadakvasla

Indian Military Academy, Dehra Dun

Rashtriya Indian Military College, Dehra Dun

National Defence College, New Delhi

Defence Services Staff College, Wellington

Armed Forces Medical College, Pune

Officer's Training School, Madras

College of Combat, Mhow

Armoured Corps Centre and School,

Ahmednagar

Infantry School, Mhow and Belgaum School of

Artillery, Deolali

College of Military Engineering, Kirkee

Military College of Telecommunication

Engineering, Mhow

College of Defence Management, Secunderabad

Army Cadet College, Dehra Dun

College of Material Management, Jabalpur

High Altitude Warfare School, Gulmarg

Army Service Corps School, Bareilly

EME School, Vadodra

Military College of Electronics and Mechanical

Engineering, Secunderabad

Remount and Veterinary Corps Centre and

School, Meerut

Army Educational Corps Training College and

Centre, Pachmarhi

Military Intelligence Training School and Depot,

Pune

Corps of Military Police Centre and School, Bangalore

Army School of Physical Training, Pune
Army/Air Transport Support School, Agra
Army Clerks Training School, Aurangabad
Army School of Mechanical Transport, Bangalore
Counter Insurgency and Jungle Warfare School, Vairengte

Institute of National Integration, Pune.

NAVAL TRAINING CENTRES

INS Chilka, Bhubaneswar
INS Circars, Visakhapatnam
INS Hamla, Malad, Mumbai
INS Mandoli, Goa
INS Shivaji, Lonavala (Maharashtra)
INS Valsura, Jamnagar (Gujarat)
INS Venduruthy, Cochin
Naval Academy, Cochin
Sailors' Training Establishment, Dabolim (Goa).

AIR FORCE TRAINING CENTRES

Air Force Administrative College, Coimbatore
Air Force Academy, Hyderabad
Air Force Technical College, Jalahalli
Air Force School, Sambre, Belgaum
Flying Instructors' School, Tambaram
Elementary Flying School, Bidar
Fighter Training and Transport Training Wings of the Air Force, Hakimpet and Yelahanka
Institute of Aviation Medicine, Bangalore
Paratroopers Training School, Agra
Navigation and Signals School, Hyderabad
College of Air Warfare, Secunderabad
Ground Training Institutes, Vadodara and Barrakpur.

Human resource development has been assigned a key role in India's development strategy. The resolution on 'National Policy on Education' adopted in 1986 called for a radical reconstruction of education so that it involved (i) a transformation of the system to relate it more closely to the life of people; (ii) a continuous effort to expand educational opportunity; (iii) a sustained and intensive effort to raise the quality of education at all stages; (iv) an emphasis on the development of science and technology; and (v) the cultivation of moral and social values. According to the resolution, the educational system must produce young men and women of character and

INDIA'S MISSILE DEVELOPMENT

The Defence Research and Development Laboratory (DRDL) has developed and successfully test-fired live missiles for the Defence Forces. They are:

1. **Prithvi**: India's first indigenously built missile, Prithvi, is a tactical *surface-to-surface* missile (TSSM). It has a range capability of 250 km with different types of warheads facilities. It was first test-fired on February 25, 1988, from Sriharikota. Prithvi was inducted into the Indian army on May 21, 1993.

2. **Trishul**: Trishul is a short-range low level quick reaction *surface-to-air* missile (SAM). When fully developed it will be used by all the three forces—Army, Air Force and Navy, against low flying objects. It has a range of 5 metres to 9 km. It was successfully test launched in 1988.

3. **Agni**: Agni is an intermediate range ballistic *surface-to-surface* missile with range capability up to 2500 km. It was first test launched on May 22, 1989. India became the fifth country in the world to have acquired this type of missile after USA, Russia, France and China.

4. **Akash**: Akash is the most modern multitarget *surface-to-air* missile designed to defend large installations like oil fields against enemy air attacks. It has a range capability of 25 km. It was successfully test launched on August 15, 1990.

5. **Nag**: Nag is an anti-tank guided missile (ATGM) of the 'fire and forget' type having a range capability of 4 km. It has been developed to counter contemporary advances in tank armour. It is the most advanced missile of its kind in the world. First test flight was made in 1988.

ability committed to national service and development.

Progress of Education: There has been a great deal of accomplishment in the field of education since Independence. The number of schools increased from 2,30,683 in 1950-51 to 8,21,988 in 1992-93, the enrolment in schools increased from about 2.4 crore in 1950-51 to about 16.7 crore in 1992-93, the number of universities (including deemed universities) increased from 25 at the time of Independence to 222 and the number of colleges from about 700 to 8,613 by 1996-97. In addition, there are over one thousand polytechnics. The student enrolment

increased from about two lakhs at the time of Independence to 61.18 lakhs in 1996-97. The literacy rate has increased from 20 per cent to 52.21 as per 1991 census.

Today education is considered pivotal social and economic development through development of human resources. This is reflected in the National Policy on Education, 1986 and in the budgetary allocation of resources. The Eight Plan outlay of education (Centre and States) at Rs. 19,600 crore is higher than the Seventh Plan expenditure of Rs. 7,633 crore by 2.6 times. In keeping with this set-up, the Central Plan outlay for education has been substantially increased from Rs. 1,825 crore in 1995-96 to Rs. 3383 crores in 1996-97.

Five thrust areas viz., adult literacy, primary education, decentralisation of management of education and technical education, have been identified to achieve universalisation of the Elementary Education to make education relevant to the needs of the community and also to meet new challenges of liberalisation and globalisation of the economy.

LITERACY LEVELS

Ever since Independence, elimination of illiteracy has been one of the major concerns of the Government. However, in view of country's vast size, huge population and limited resource position, not much progress could be made in this direction. Thus, even in 1991, the literacy rate for the country, as a whole, was as low as 52.21 per cent. However, literacy recorded an increase by 8.65 per cent as the figure in 1981 was 43.56 per cent. The following tables show the literacy rates for male, female and total population since 1901 and for the States and Union Territories as per 1991 census of population along with their ranking among all the States and Union Territories.

All India Literacy Rates (Per cent)

Year	Male	Female	Total
1901	9.8	0.6	5.3
1911	10.6	1.1	5.9
1921	12.2	1.8	7.2
1931	15.6	2.9	9.5
1941	24.9	7.3	16.1
1951	24.9	7.9	16.7
1961	34.4	13.0	24.0
1971	39.5	18.7	29.5
1981	56.37	29.75	43.56
1991	64.20	39.19	52.21

Literacy Rates—States and Union Territories

State and Union Territory census	Literacy rate 1991	All India Ranking
States		
Andhra Pradesh	44.03	25
Arunachal Pradesh	41.59	28
Assam	53.42	22
Bihar	38.48	31
Goa	75.51	(5)
Gujarat	61.29	15
Haryana	55.85	21
Himachal Pradesh	63.66	11
Karnataka	56.04	20
Kerala	69.81	(1)
Madhya Pradesh	44.20	26
Maharashtra	64.87	12
Manipur	59.69	14
Meghalaya	48.10	24
Mizoram	82.27	(2)
Nagaland	61.65	13
Orissa	49.09	23
Punjab	58.51	18
Rajasthan	38.55	30
Sikkim	56.94	19
Tamil Nadu	62.66	10
Tripura	60.44	16
Uttar Pradesh	41.60	27
West Bengal	57.70	17
Union Territories		
Andaman & Nicobar	73.02	3
Chandigarh	77.81	(4)
Dadra and Nagar Haveli	40.71	29
Daman and Diu	71.20	(3)
Delhi	75.29	(6)
Lakshadweep	81.78	(3)
Pondicherry	74.74	(7)
All India *	52.21	-

*Excludes Jammu & Kashmir.

Even though Indian educational scenario, over the past few decades, has been characterised by massive quantitative expansion at all levels, it is still faced with a staggering backlog of high literacy levels of over 47 per cent in 1991. The attainment of the goal of universal elementary education still remains a distant possibility. Concerted efforts have, therefore, to be made to wipe off illiteracy in the shortest possible time if the country has to take rapid strides in its socio-economic development. With this in view, several schemes and projects have been taken up to eradicate illiteracy and promote education among the masses.

NATIONAL POLICY ON EDUCATION, 1986 (New Education Policy)

The National Policy on Education, which was approved by Parliament in 1986, seeks to establish, for the first time in free India's history, a National System of Education, which lays down an overall curricular framework and a core curriculum to establish comparability of competence at the end of various stages of education all over the country, reinforce the integrative aspect of society and culture and also establish a value system necessary for an egalitarian, democratic and secular society. The new policy presents the problem of socio-cultural inequalities in a very sharp focus and lists the specific steps in such detail that it could be described as nothing less than a charter, not only for equality of access to education, but also for equalisation with regard to the status of disadvantaged sections of society. It lays down that educational transformation, reduction of disparities, universalisation of elementary education, adult education and scientific and technological research would be accepted as national responsibilities for which the provision of adequate resource support will be the concern, not only of the State Governments, but of all the agencies which are collectively responsible for national development.

The revised Programme of Action 1992 of the NPE, 1986 resolves to ensure free and compulsory education of satisfactory quality to all children up to 14 years before we enter the 21st Century.

National System of Education: The concept of a National System of Education implies that up to a given level, all students, irrespective of caste, creed, location or sex, have access to education of a comparable quality. The National System of Education envisages a common educational structure. The 10+2+3 structure has now been accepted in all parts of the country. Regarding the further break-up of the first 10 years, efforts will be made to move towards an elementary system comprising five years of primary education and three years of upper primary, followed by two years of high school.

The National System of Education will be based on a national curricular framework which contains a common core along with other components that are flexible. The common core will include the history of India's freedom movement, the constitutional obligations and other contents essential to nurture national identity. These elements will cut across subject areas and will be

designed to promote values such as India's common cultural heritage, egalitarianism, democracy and secularism, equality of the sexes, protection of the environment, removal of social barriers, observance of the small family norm and inculcation of the scientific temper. All educational programmes will be carried on in strict conformity with secular values.

Minimum levels of learning will be laid down for each stage of education. Steps will also be taken to foster among students an understanding of the diverse cultural and social systems of the people living in different parts of the country. The young will be encouraged to undertake the rediscovery of India, each in his own image and perception.

The nation, as a whole, will assume the responsibility of providing resource support for implementing programmes of educational transformation, reducing disparities, universalisation of elementary education, adult literacy, scientific and technological research, etc.

In order to operationalise the revised policy of the government, the following three sub-schemes were proposed under "Operation Blackboard" during the Eighth Plan: (i) Continuation of the on-going scheme to cover all the remaining schools identified in the Seventh Plan; (ii) Expanding the scope of the scheme to provide three rooms and three teachers in primary schools with provision for about 50 percent women teachers in primary schools as mandatory for all the States / UTs; and (iii) Extending the scope of the scheme to upper primary schools.

PRIMARY EDUCATION

Following the directions given by National Policy on Education 1986 (revised in 1992), Primary Education was given an over-riding priority in order to realise the goal of UEE during 7th & 8th Plans. Despite this, backlog has continued in enrolment and drop-out rate is still high. Two

Support to Primary Education (Mid-day Meals) have arrested these trends to some extent. However, there is still a long way to go to achieve UEE. The National Literacy Mission with a mandate to make 100 million people literate had achieved only just over 50% success (56.1 million) by 1996.

During the Ninth Plan, keeping in view the declaration of education as an aspect of fundamental human right to life, around 6% of

GDP is proposed to be earmarked for education by the year 2000 and 50% of that will be spent on Primary Education.

SCHOOL EDUCATION

The school level education is primarily looked after by the State Governments. Education in classes I to VIII in Government, local body and aided schools in almost all the States and Union Territories, except in Uttar Pradesh, is free. Uttar Pradesh is the only State where education of boys in classes VII and VIII is not free. Many of the States and Union Territories have enacted legislation for compulsory primary education. However, in view of the vast numbers involved and the socio-economic compulsions keeping children away from the schools, it has not been possible to fully enforce this legislation.

Operation Blackboard: In pursuit of the goal of universalisation of elementary education, the 'Operation Blackboard' scheme has been formulated with a view to bringing about substantial improvement in primary schools run by the Government, local bodies and recognised aided institutions. The Operation Blackboard scheme has three components, viz.,

(i) provision of at least two all-weather rooms;
(ii) provision of at least two teachers, one of them preferably a woman, in every single teacher primary school; and

(iii) provision of essential teaching and learning material including blackboards, maps, charts, a small library, toys, games, sports material and some equipment for work experience. It was proposed to implement the scheme of Operation Blackboard in a phased manner covering all the primary schools by the end of the year 1990.

Navodaya Vidyalayas: The National Policy on Education provides for opening of residential schools for the talented children. These schools are named Navodaya Vidyalayas. It is proposed to open Navodaya Vidyalayas in each district of the country. The Navodaya Vidyalayas are aimed at providing opportunities to the talented children to develop their full potential and to promote national integration.

Education in Navodaya Vidyalayas is provided free of charge. Admissions to Navodaya Vidyalayas are made at the level of Class VI on the basis of an admission test, designed by the NCERT. An autonomous organisation known as Navodaya Vidyalaya Samiti has been set up to establish and run these Vidyalayas.

ADULT EDUCATION

The National Policy on Education, 1986 envisages that the whole nation must pledge itself to the eradication of illiteracy, particularly in the 15-35 age group. The programme of action stipulates that about 80 million adult illiterates in the age-group 15-35 would be covered. Now the programme aims to impart functional literacy to 100 million adult illiterates in the age group of 15-35 (including age group of 9-14 where NEE is not in operation) by 1997. To achieve these targets, the major strategies to be adopted include reorganisation and strengthening of the existing schemes of adult education, launching of mass programme of functional literacy, organisation of various programmes of continuing education, strengthening technical resource system and mounting of a technology mission for eradication of illiteracy.

Total literacy campaigns have been launched in 401 districts of the country covering over 139 million illiterate persons and 166 districts have commenced post-literacy campaigns to consolidate the gains of literacy. The focus of the campaign is now on the four major Hindi speaking and literacy-backward States of Bihar, Madhya Pradesh, Rajasthan & Uttar Pradesh (Bihar).

HIGHER EDUCATION

There are around 207 universities (including deemed universities) and over 8,545 colleges and institutions of higher education in India. Among these are twelve Central Universities and the remaining are functioning under the State Acts. Besides, there are 34 institutions declared as deemed to be universities. In Higher Education due cognizance has to be taken of the fact that the country has an existing infrastructure which despite its problems is still one of the best in the developing world. The country needs to capitalise on this advantage to enhance our competitiveness in the global world.

TECHNICAL EDUCATION

Technical education system is to produce trained manpower in adequate numbers for the economic development of the country. The facilities of education and training in the areas of engineering and technology have therefore been expanded systematically. Training has also been diversified and programmes modified to take care of the needs of the modern development in technology. Activities have also been extended for application of science and technology to rural development.

for establishment of linkages between different groups of technical education system and the development sectors. The area of emerging technologies such as Informatics, telematics, education technology, micro-electronics, robotics, water resource management, energy studies, etc., are receiving special attention for development.

Among the premier institutions imparting technical education are: Indian Institute of Science, Bangalore; Indian School of Mines, Dhanbad; National Institute of Training in Industrial Engineering, Mumbai; National Institute of Foundry and Forge Technology, Ranchi; School of Planning and Architecture, New Delhi; Administrative Staff

College of India, Hyderabad, four Indian Institutes of Management at Ahmedabad, Bangalore, Calcutta and Lucknow; four Technical Teacher's Training Institutes at Bhopal, Calcutta, Chandigarh and Chennai; five Indian Institutes of Technology at Mumbai, Delhi, Kanpur, Kharagpur and Chennai; and 17 Regional Engineering Colleges spread all over the country. There are over 200 recognised technical education institutions at the first degree level and about 500 polytechnics at the diploma level. They have an annual admission capacity of 40,000 and 80,000 students, respectively. Facilities also exist for post-graduate studies and research work for about 10,000 scholars.

20. Science and Technology

Scientific research in India is carried out under the auspices of the Central Government, the State Governments and various public and private sector organisations, including industry. There are about 200 research laboratories within the purview of major scientific departments carrying out research in different areas. While the scientific institutions under various Ministries of the Central Government carry out research programmes of practical relevance to the areas of responsibility of their Ministries, the State Governments supplement the efforts of the Central Government in those areas which are of prime importance to them, namely, agriculture, animal husbandry, etc. A major work in the field of science and technology is carried out in educational institutions that come under the Central and State Governments. Scientific research is also gaining momentum in many industrial establishments.

SCIENCE POLICY

The Government has been consistently laying emphasis on the development of science and technology as a major instrument for achieving national goals of self-reliance, and socio-economic development. The Scientific Policy Resolution as adopted by Parliament on March 4, 1958, lays stress on Government's responsibility to secure for the people, the benefits from acquisition of scientific knowledge and practical application of research. The policy of the Government is to encourage individual initiative for dissemination of knowledge and foster programmes to train scientific personnel to fulfil country's needs in the diverse fields of agriculture, industry, defence and

education. A number of new agencies and departments, such as the Department of Environment, Department of Ocean Development, Department of Non-conventional Energy Sources, Department of Scientific and Industrial Research, Department of Bio-technology, Department of Science and Technology, etc., have been set up to deal with newly emerging areas of knowledge.

AGRICULTURAL RESEARCH

The contributions in scientific and technological research have induced a phenomenal transformation in Indian agriculture from subsistence type into commercial farming. Indian agriculture still continues to face serious challenges from the ever-increasing population, depleting land fertility and shrinking renewable energy sources. Therefore, the priorities and thrust areas would be on improving the productivity of crops, animals and fisheries and ensuring stability in production.

The growing resilience of Indian agriculture, its capacity to withstand droughts and natural calamities, and the near attainment of the goal of food self-sufficiency by the country are a tribute to the unflinching efforts of the agricultural scientists as well as millions of farmers who have willingly and enthusiastically transferred this new agricultural technology from the laboratories to the farms and fields. But for the development of new varieties of HYV seeds, crop protection measures, improved farming practices, better water management, etc., the kind of agricultural revolution that the country has witnessed over the past few years, could have not been possible.

INDUSTRIAL RESEARCH

Over the years a strong science and technology infrastructure base has been established in the country. This covers a chain of national laboratories, specialised centres, various research and development and academic institutions, training centres, etc., which continuously provide expertise, technically trained manpower and technological support to industry.

COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

The CSIR with its network of laboratories and research institutions is a major instrument of scientific and industrial research under state auspices and supports research in universities and other centres of learning. The role of the Council is associated with the work relating to natural resources survey, roads, buildings, public utility services like sanitation, water supply, waste disposal and industries.

The CSIR also maintains a register of scientists and technical personnel in the country. Since 1957, the Council is administering the Shanti Swarup Bhatnagar Memorial Awards in physical, chemical, biological, medical, engineering and geological sciences and mathematics.

INDIA DEVELOPS SUPERCOMPUTER

India has joined a select club of six advanced countries with the Pune-based Centre for Development of Advance Computing (C-DAC) developing the country's first supercomputer.

'Param', the indigenously built 64-NODEC supercomputer, is capable of reaching peak power of 100 megaflops, which by the end of August 1990 was raised to one gigaflop.

The development of 'Param' promises the creation of a seamless computing platform for supercomputing at an affordable price in the international context.

'Param' has a wide array of applications—oil reservoir modelling for enhanced oil recovery, seismic data processing for drilling oilwells, satellite image processing for resource exploration and disaster management, geographical information system for cartography and mapping, weather forecasting for agriculture, computational fluid dynamics for space research, finite element modelling for design of large and complex structures, semi conductors process simulation and very large scale integrated circuit design for the semiconductor industry.

It would also be useful in molecular modelling for drug and chemical design of new materials. A large-scale database management system, speech recognition, computer vision and natural language understanding, computer animation for feature film production, all at a speed and scale not achievable by indigenous computers so far.

C-DAC, functioning under the Department of Electronics, has delivered 'Param' as a culmination of the second phase of the three-tier programme. The programme aims at designing, developing and delivering high performance super computers based on parallel architecture and their commercialisation at the internationally competitive prices.

NUCLEAR RESEARCH

India recognised the importance of atomic energy quite early and the Atomic Energy Commission was set up in August 1948 to look after atomic energy activities in the country. The functions of the Atomic Energy Commission are: (i) to organise research in atomic energy for peaceful purpose; (ii) to train atomic scientists in the country; (iii) to promote nuclear research in commission's own laboratories as well as in universities and research institutions in India; (iv) to undertake prospecting of atomic minerals in India and to extract such minerals for use on industrial scale.

The executive agency for implementing atomic energy programme is the Department of Atomic Energy which was set up in August 1954. The Bhabha Atomic Research Centre at Trombay, near Mumbai, which was started in 1957, is the largest single scientific establishment in the country directing nuclear research. At present, it houses five research reactors: 'Apsara', a one megawatt swimming pool type reactor; 'Cirus', a 40 mw reactor; 'Zerlina', a zero energy experimental thermal reactor; 'Purnima II', a homogeneous reactor which uses uranium-233 fuel in the form of a solution, and 'Druva', a 100 mw high power nuclear research reactor. Besides India has some of the most advanced nuclear research laboratories and workshops in the world.

'Cirus', the country's high neutron flux nuclear research reactor, has completed more than 30 years of successful functioning and can operate for another 15 years.

The 40 megawatt nuclear reactor Cirus which was commissioned on July 10, 1960 has made significant contributions towards self reliance in the field of application of nuclear science and technology for peaceful development purpose.

100 MW reactor, also located at Kalpakkam, completed five years of operation on 1990.

The first neutron reactor 'Kamini' which is located at Indira Gandhi Centre for Atomic Research at Kalpakkam, near Madras, is a mini reactor that will also use uranium.

As a result of the work done at Trombay and the Atomic Energy Commission, India could carry out an underground nuclear test at Pokhran in the Rajasthan desert on 13, 1974 to become one of the very few countries to achieve it.

Advanced experimental research in nuclear physics is carried out at the Calcutta-based Variable Energy Cyclotron Centre. The High Altitude Research Laboratory at Gulmarg provides facilities for high altitude research to all the scientific institutions and universities in India. A nuclear research laboratory at Srinagar and a centre for advanced technology also exist at Indore. The Reactor Research Centre at Kalpakkam near Madras (which was renamed as the Indira Gandhi Centre for Atomic Research) is primarily for carrying out the research and development work needed to develop fast breeder technology. A 14 mw fast breeder test reactor at Kalpakkam went critical on October 18, 1985.

There are nine nuclear power reactors in commercial operations which are the responsibility of the Nuclear Power Corporation of India (earlier Nuclear Power Board). These include two numbers of boiling water reactors at Tarapur and Seven pressurised heavy water reactors, two each at Rawatabhata (Rajasthan), Kalapakkam (Tamil Nadu), Narora (U.P.) and one at Kakrapar (Gujarat). Four more reactors, two each at Kaiga (Karnataka) and Rawatabhata are under construction.

The Nuclear Fuel Complex at Hyderabad fabricates fuel elements required for pressurised heavy water reactors. It also produces enriched uranium fuel elements from imported uranium hexafluoride for the boiling water reactors at Tarapur.

Heavy water is one of the essential input for the pressurised heavy water reactors, being used both as a coolant and moderator. There are eight heavy water producing plants at Nangal, Baroda, Tuticorin, Kota, Talcher, Thal, Hazira and Manugum.

India today is the seventh country in the world and the first developing nation to have the distinction of mastering fast breeder technology.

The other six nations are the United States, C.I.S. (the former Soviet Union), France, Britain, Germany and Japan. The Rs. 68-crore fast breeder test reactor (FBTR) has been designed entirely by Indian scientists using indigenous mixed carbide fuel with a plutonium and natural base instead of enriched uranium. The commissioning of the FBTR is a major step in the country's nuclear power programme. It paves the way for using our vast thorium resources through breeder reactors, that produce both power and fuel, to meet the country's requirements of the 21st century. The development of U-233 based fuel and fabrication of Mixed Oxide fuel assemblies for power reactors through atomic research, is yet another landmark achievement.

MILESTONES IN NUCLEAR RESEARCH

1. March 12, 1944: Dr. Homi Jehangir Bhabha writes to Sir Dorabji Tata Trust for starting Nuclear Research in India.
2. Dec. 19, 1945: Tata Institute of Fundamental Research, Mumbai is inaugurated.
3. Aug. 10, 1948 The Atomic Energy Commission is constituted.
4. July 29, 1949: Rare Minerals Survey Unit is set up. Later, this unit became Atomic Minerals Division.
5. Aug. 18, 1950: Indian Rare Earths Limited is set up for recovering minerals, processing for rare earths compounds and thorium — uranium concentrates.
6. Aug. 03, 1954. Department of Atomic Energy is created
7. Aug. 04, 1956: APSARA—The first Research Reactor in Asia, attains criticality at Trombay, Bombay.
8. Jan. 20, 1957: Prime Minister Pt. Jawaharlal Nehru inaugurates Atomic Energy Establishment, Trombay.
9. Aug. 19, 1957: Atomic Energy Establishment Training School starts functioning.
10. Jan. 30, 1959: Uranium Metal Plant at Trombay produces uranium.
11. July 10, 1960: 40 MW Research Reactor CIRUS attains criticality.
12. Jan. 14, 1961: Research Reactor ZEPHYRUS attains criticality. Zerlina was decommissioned in 1983.
13. Jan. 22, 1965: Plutonium Plant inaugurated.
14. Jan. 22, 1967: Atomic Energy Establishment is renamed as Bhabha Atomic Research Centre.

COMPETITION SUCCESS REVIEW YEAR

15. Apr. 11, 1967: Electronics Corporation of India Limited is set up at Hyderabad for producing electronic systems, instruments and components.
16. Oct. 04, 1967: Uranium Corporation of India Limited is set up at Jaduguda, Bihar for mining and milling of uranium ores.
17. Dec. 31, 1968: Nuclear Fuel Complex is set up at Hyderabad.
18. Mar. 12, 1969: Reactor Research Centre is started at Kalpakkam, renamed as Indira Gandhi Centre for Atomic Research on December 18, 1985.
19. May 01, 1969: Heavy Water Project is constituted. Later, this unit became Heavy Water Board.
20. Oct. 02, 1969: Tarapur Atomic Power Station starts commercial operation.
21. May 18, 1972: PURNIMA-I attains criticality. In later version PURNIMA-II reactor becomes critical on May 10, 1984.
22. Nov. 30, 1972: Rajasthan Atomic Power Station Unit I at Kota begins commercial operation. Unit-II went commercial on November 1, 1980.
23. May 18, 1974: Peaceful underground Nuclear Experiment is conducted at Pokhran, Rajasthan.
24. Jun. 16, 1977: Variable Energy Cyclotron becomes operational at Calcutta.
25. Nov. 19, 1982: Power Reactor Fuel Reprocessing Plant at Tarapur is commissioned.
26. Nov. 15, 1983: Atomic Energy Regulatory Board, is constituted.
27. Jan. 27, 1984: Madras Atomic Power Station-Unit I at Kalpakkam starts commercial operation. Unit-II went commercial on March 21, 1986.
28. Feb. 19, 1984 Centre for Advanced Technology at Indore is inaugurated.
29. Mar. 08, 1984: Plutonium - Uranium mixed Carbide Fuel for fast breeder test reactor is fabricated in BARC.
30. Mar. 04, 1985: Waste Immobilisation Plant at Tarapur is commissioned.
31. Aug. 08, 1985: Fifth Research Reactor DHRUVA (100 MWt) attains criticality.
32. Oct. 18, 1985: Fast Breeder Test Reactor (FBTR) at Kalpakkam attains criticality.
33. Dec. 30, 1988: 14 MV Pelletron Accelerator is inaugurated.
34. Mar. 12, 1989: Narora Atomic Power Station-Unit I attains criticality.
35. Oct. 24, 1991: Narora Atomic Power Station-Unit II attains criticality.
36. Sept. 03, 1992: Kakrapar Atomic Power Station-Unit I attains criticality.
37. Aug. 12, 1993: Technology Offer Centre inaugurated at DAE, Mumbai.
38. Jan. 08, 1995: Kakrapar Atomic Power Station-Unit II attains criticality.
39. December 16, 1985: Kalpakkam FBTR dedicated to nation.
40. January 08, 1995: Second unit of Kakrapar atomic power station near Surat goes critical.
41. June 10, 1996: India ranks 11th among the nuclear power station operating countries world wide.
42. October 29, 1996: Kamini (Kalpakkam mini), a 30 kw research reactor (which uses man-made uranium as fuel) attains 'criticality'.
43. March 28, 1998: India develops a new version of Param Super Computer, Param 1000, Asia's second largest super computer capable of performing 1000 billion calculations per second.
44. May 11, 1998: India goes nuclear and lays claim to join the P-5 group as nuclear power

21. Space Research

Starting from the simple sounding rockets and passive vapour cloud payloads, the Indian space programme has graduated, over the last quarter of a century, to the development of guidance controlled satellite launch vehicles and state-of-the-art satellite systems. The primary goal of the programme, however, remains the same, namely, self-reliant use of space technology for national development. The main thrusts of the programme are: (i) satellite-based communications for various applications; (ii) satellite-based resources survey and management, environmental monitoring

and meteorological applications, and (iii) development and operationalisation of indigenous satellites, launch vehicles and associated ground segment for providing these space based services.

The Indian space programme was launched in 1962 when the Indian National Committee for Space Research was formed. To this were added the Indian Space Research Organisation in 1969, and the Space Commission and Department of Space in 1972. The Space Commission and the Department of Space promote the unified

development and application of space science and technology for identified national socio-economic objectives.

INDIAN SPACE RESEARCH ORGANISATION (ISRO)

The Indian Space Research Organisation (ISRO) is responsible for the planning, execution and management of space research activities and space application programmes. The ISRO, which has its headquarters in Bangalore, provides rockets and laboratory facilities to scientists belonging to different organisations in India for conducting approved space science experiments.

The major establishments of ISRO are: (1) The Vikram Sarabhai Space Centre (VSSC) at Thiruvananthapuram, (2) The ISRO Satellite Centre (ISAC) at Bangalore, (3) the SHAR Centre at Sriharikota island in Andhra Pradesh, (4) The Space Applications Centre (SAC) at Ahmedabad, (5) The Auxiliary Propulsion System Unit (APSU) at Bangalore and Thiruvananthapuram, (6) The Developmental and Educational Communication Unit (DECU) at Ahmedabad.

The VSSC is the main research and development centre for space technology. This centre is active in developing sounding rockets and satellite launch vehicles, scientific and technological payloads, ground based and vehicle-borne instrumentation and has production facilities for propellants, rockets hardware and electronics.

The ISAC is responsible for the design, fabrication and integration of spacecraft and the development of satellite technology.

The SHAR has been developed as a testing launching range for sounding rockets and satellite launch vehicles. It serves as the nerve centre for the ISRO tracking network. The SHAR also operates and maintains the Thumba Equatorial Rocket Launching Station (TERLS) in Kerala.

The SAC is engaged in the planning and execution of the space application projects for ISRO. Its objective is to develop the practical applications of space science and technology primarily in communications and remote sensing.

The APSU at Bangalore and Thiruvananthapuram has the primary responsibility of designing, developing and supplying the propulsion packages for launch vehicles and for satellites.

The DECU at Ahmedabad has been set up to (i) produce developmental educational and

experimental programmes for transmission and also for various non-broadcast purposes; (ii) maintain and operate the programme production facilities located at SAC campus and to plan and execute augmentation as approved and funded; (iii) develop and adapt hardware required for TV programme production; (iv) produce appropriate support material for the TV programmes and to catalyse 'utilisation' activities in order to maximise the impact of TV programmes; (v) provide training, guidance, help and consultancy services within the country and outside in the related fields and (vi) participate in studies on communication planning, future technologies and options, etc.

SPACE MISSIONS

Mankind took a giant leap into space on July 20, 1969 when the American astronaut, Neil Armstrong, landed on the moon. India's fledgling space programme, too, started to look around the same time and has now emerged as a key player in this high-tech arena.

India's space venture started in a small way when Dr. Vikram Sarabhai, the founder chief of Indian Space Research Organisation (ISRO), started the Thumba Equatorial Rocket Launching Station at Thiruvananthapuram in 1962. The station's aim was to launch sounding rockets into the upper atmosphere to study its physics. Of course, India entered the exclusive "space club" when the first indigenously-built satellite, "Aryabhata", was launched in orbit on April 19, 1975, by a Soviet rocket to carry out scientific experiment.

More importantly, India pioneered the use of space technologies for large-scale societal use with the Satellite Instructional Television Experiment (SITE) in 1975 using an American satellite, ATS-6. Educational programmes were beamed daily from the satellite to six States. People could watch the programme through direct reception television sets installed at community centres.

The national space programme has come a long way since then. Now India is one of the six countries in the world with its home-built satellites in orbit. The INSAT series satellites with capabilities to provide communications, meteorology and disaster warning systems is unique as other countries have separate spacecraft for each of these functions.

The Indian remote sensing satellites have helped in extensive mapping of our natural resources and the voluminous data generated through these are used in a variety of fields. Even the developed countries, including the U.S., have started to buy the data collected by IRS.

However, the development of indigenous rockets to launch heavy satellites from the Indian soil itself has not progressed well. Despite our success in launching IRS-1D from Srihankota Range (SHAR) (Sep. 29, 1997), we are still dependent on the European Space Agency to put the INSAT series of satellites into orbit. The delay in the Geosynchronous Satellite Launch Vehicle (GSLV) programme due to the dependence on Russian-built cryogenic engines is another such example. But space scientists are confident of overcoming the obstacles in this area too.

Meanwhile, following the test-firing of "Ghaun" missile (range 1500 km) by Pakistan in early April 1998, ISRO is contemplating to launch a low earth orbit-remote sensing satellite for surveillance over the Indian sub-continent at the instance of Defence Ministry.

MILESTONES IN SPACE PROGRAMME

From the firing of sounding rockets as a toddler in 1963 to placing satellites weighing over 100 kg into low-earth orbits, the Indian space programme has crossed the following important milestones :

1963 : First sounding rocket launched from the Thumba equatorial rocket launching station (TERLS) (November 21).

1965 : Space Science and Technology Centre set up at Thumba.

1967 : Satellite Telecommunication Earth Station set up at Ahmedabad.

1968 : TERLS dedicated to United Nations (Feb. 2).

1969 : ISRO formed under Department of Atomic Energy (August 15).

1972 : Space Commission and Department of Space set up (June 1).

1972-74 : Air-borne remote sensing experiments carried out.

1975 : First Indian satellite "Aryabhata" launched from the Soviet Union (April 19). This satellite survived in orbit beyond its life of six months.

1975-76 : Satellite Instructional Television Experiment (SITE).

1977 : Satellite Telecommunication Experiments Project (STEP).

1979 : Experimental satellite for remote observation "Bhaskara-I" launched from the Soviet Union (June 7). This satellite was designed and fabricated by ISRO.

First experimental launch of satellite launch vehicle SLV-3 from Srihankota (SHAR), August 17.

1983 : Second experimental launch of SLV-3 with the Rohini satellite on board (July 18).

1981 : First developmental launch of SLV-3 with the Rohini satellite (RS-D1) on board (May 31).

"Apstar", an experimental geostationary communication satellite, launched by the Ariane vehicle of the European Space Agency from Kourou in French Guyana (June 19). With this India entered the geostationary satellite communications era.

"Bhaskara-II" launched from a Soviet cosmodrome and using Soviet vehicle (July 29). It was an improved version of "Bhaskara-I".

1982 : Multipurpose Indian national satellite built by the Ford Aerospace and Communication Corporation of U.S.A and launched by NASA's Delta rocket from Cape Canaveral, Florida (April 10). It was the first of the first-generation Indian national satellites, which covered the areas of telecommunication, meteorology, TV relay and radio broadcasting. It was parked 37,000 km in space over Indonesia but ended its life prematurely (September 6, 1982).

1983 : Second developmental launch of SLV-3 with the RS-D2 on board (April 17).

INSAT 1-B launched by U.S. space shuttle "Challenger" from Cape Canaveral, Florida (August 30). It remained in orbit for more than the span of seven years.

1984 : The first joint Indo-Soviet manned space flight mission. Sq Ldr Rakesh Sharma became the first Indian to undertake a space voyage (April 3).

1987 : First developmental launch of ASLV from SHAR (March 24).

1988 : First operational Indian remote sensing satellite (IRS 1A) launched from Baikonur in the Soviet Union (March 17).

Second developmental launch of ASLV (April 13).

INSAT-1C launched by Ariane vehicle from Kourou in French Guyana (July 29). Like INSAT-1B, INSAT-1C was a multipurpose satellite in geostationary orbit for domestic long distance telephonic communication, continuous meteorological earth observation, disaster warning, direct

TV broadcasting and programme distribution. It was declared non-usable in November 1989.

1990 : INSAT-1D launched (June 12) by U.S. Delta rocket from Cape Canaveral (June 12). After becoming operational (July 17), it became the kingpin of the country's satellite based system providing telecommunications radio and television networking and round-the-clock weather monitoring.

1991 : Second remote-sensing satellite IRS-1B launched from the Soviet Union (August 29).

1992 : Augmented Satellite Launch Vehicle (ASLV-D3) launched from SHAR and placed SROSS-C in low-earth orbit (May 20).

First indigenously-built second generation satellite, INSAT-2A, launched by the European Space Agency's Ariane rocket at Kourou, French Guyana in South America (July 10) and became fully operational (August 15).

1993 : INSAT-2B launched by the Ariane rocket from Kourou, French Guyana (July 23) and was successfully injected into Geosynchronous Transfer Orbit.

First developmental launch of PSLV from SHAR fails (September 20). Its purpose is to help expand regional television services and usher in an era of satellite news gathering in India.

1994 : Augmented Satellite Launch Vehicle (ASLV-D4) launched with Stretched Rohini Satellite System (SROSS-C2) as payload from SHAR (May 4). SROSS-C2 is successfully put in its final intended orbit with a perigee of 429 km and an apogee of 628 km at the same inclination of 9.5 degrees after using manoeuvring operations (9).

INSAT 2C, the heaviest and the first ve, third indigenous satellite was launched by Ariane rocket from Kourou island in French Guyana (December, 7) and was successfully put into its orbit.

1996 : PSLV-D3 was successfully launched from Sriharikota, placing the 922-kg Indian remote sensing satellite, IRS-P-3, into orbit. With this, India has entered the US-dominated global market for satellite launch vehicle.

1997 : INSAT-2D was launched by The European rocket Ariane from Kourou in the French Guyana on June 4, 1997. It was India's fourth indigenous communication satellite & was going round the earth once in every ten and a half hours, in an elliptical orbit with a perigee of 200 km and an apogee of 35,000 km. It carried 23 transponders to provide television and telephone services

However, due to a short circuit, the Rs. 300 crore project became inoperational (Oct. 5, 1997).

IRS-1D : Meanwhile, the successful blast off of PSLV-C.1, country's first indigenous polar satellite launch vehicle, from Sriharikota Range (SHAR) on Sept. 29, 1997 launching the 1200 Kg IRS-1D has placed the country in the exclusive club of 4 nations (USA, Russia, France & Israel) capable of launching 1000 kg class of Satellites and has ended ISRO's dependence on Russian or French Ariane vehicles to launch IRS Satellites.

INSAT-2E : Following failure of INSAT-2D in October 1997, ISRO has put off the launch of INSAT-2E, the fifth and last in the second generation of India's communications satellites, to October 1998 as against the earlier plans in the first quarter of 1998. ISRO is now busy incorporating modifications to insulate INSAT-2E from any INSAT-2D like experience.

The Rs. 62 crore satellite from which 11 C-band transponders of 36 MHz capacity have been leased to INTELSAT under a 100-million dollar deal, is to be shipped to French Kourou in August for a launch in October by Ariane-4 rocket.

INSAT-3 : The first and second of the third generation satellite, INSAT-3A and INSAT-3B would be flown in 1999. While INSAT-3B would be an exclusive communication satellite, INSAT-3A would carry a meteorological payload—Very High Resolution Radiometer (VHRR), besides the communication payloads.

At least three of the INSAT-3 series would be launched by Ariane rockets as the Indian Geosynchronous Launch Vehicle (GSLV) is still under development at Liquid Propulsion Systems Centre (LPSC) and Vikram Sarabhai Space Centre (VSSC) in Thiruvananthapuram.

The first GSLV using Russian cryogenic engines and carrying an engineering model of Gramsat would be launched from Sriharikota some time in 1999.

Meanwhile, the Arabsat-1C satellite carrying 25 C-band and S-band transponders which India bought in 1997 following failure of INSAT-2D and renamed as INSAT-2DT, has been moved to 55 degrees East from 20 degrees East.

The \$40 million satellite which is being controlled from Tunisia will be taken over by Master Control Facility, Hassan soon. The satellite is expected to meet the immediate transponder requisition of the country.

ISRO has announced the launching of 5 satellites under INSAT-3 programme between 1999-2003.

1998 : ISRO successfully launched, under a commercial arrangement with German Space Agency, a Rohini sounding rocket from SHAR on April 28, 1998 carrying a set of instruments from Germany to study the upper atmosphere.

Triple Satellite Launch Takes India Forward : May 26, 1999 would go down as a red-letter day in the annals of space technology of India when the majestic four-stage 44.4 metre tall PSLV-C2 with a lift-off weight of 294 tonnes soared into a cloudy sky at 11.52 am from Sriharikota with a spectacular and successful first-ever multiple launch carrying 3 satellites—one home made Ocean Remote Sensing, the 1050 kg IRS P-4 and two foreign ones, the 45-kg German Tubsat and 107kg South Korean Katsat-3 in the near circular polar sun synchronous at an altitude of 727km; thus proclaiming to the world India's capabilities to provide launch services to foreign satellites commercially. In the process, ISRO netted \$1 million from the launch of foreign satellites recovering almost the entire cost (Rs. 48 crore) of its IRS-P4 Oceansat, the country's first satellite dedicated to ocean studies including information on chlorophyll distribution to identify potential fishing zones and study of coastal areas, sea surface temperature, liquid water contents and water vapour in the atmosphere above oceans. ISRO is planning a more advanced version of the Oceansat satellite.

1999 : Meanwhile, ISRO plans to launch INSAT-3B in the second quarter of 1999 from Ariane space station.

FIRST INDIAN IN SPACE

It is a matter of pride that India became the 14th nation in the world on April 3, 1984 to have sent a man into space. Squadron Leader Rakesh Sharma became India's first man in space when he was launched aboard Soyuz T-11 spaceship from the Baikonour cosmodrome in Kazakhstan (U.S.S.R.) along with two Soviet cosmonauts, Flight Commander Yuri Vasilevich Malyshev and Flight Engineer Gennady Mikhailovich. Apart from the U.S.A. and the U.S.S.R., the countries that have sent a man into space are Bulgaria, Hungary, Vietnam, Cuba, Czechoslovakia, Poland, East and West Germany, Romania, Mongolia and France.

Sqn. Ldr. Sharma returned from his maiden space flight on April 11, 1984 landing on a carpet of fresh snow, 60 km from Arkalik, the small town in Kazakhstan, in a spectacular finish to the flawless mission.

FIRST INDIAN WOMAN IN SPACE

Dr. Kalpana Chawla, an Indian or Indian-American woman, became the first Indian woman to go into the space on November 19, 1997 on a 16-day mission on NASA's Columbia shuttle as a Mission Specialist, to study the outer atmosphere of sun.

22. Oceanographic Research

India has achieved distinction in the field of oceanographic technology. It has succeeded in collecting metallic nodules from the ocean floor, which only very few advanced countries could achieve. India's oceanographic adventure by the scientists of the National Institute of Oceanography with the help of researchship "Gaveshani" in 1981 stunned the big powers and some multinationals who had hoped to monopolise the ocean mining industry. India thus became the first country in the world to successfully collect nodules from the ocean. Only six other nations have nodule mining capability, viz., the U.S.A., the former U.S.S.R. the U.K., Germany, France and Japan. The process gives India access to a vast source of

metals which have accumulated over millions of years.

In recognition of the investments that had been made in research and exploration of the deep seabed areas for resources, India was accorded the 'Pioneer investor status' by the UNO in 1982. In August 1987, India registered itself as a first pioneer investor and a mine site of 1,50,000 square kilometres in the Central Indian Ocean basin has been allotted to India. India is the only developing country to have qualified for the pioneer investor status and the first country in the world to have secured registration of site. Underscoring the importance of research, India set up a N

Ocean Technology at IIT, Madras for undertaking research in the areas of ocean energy, marine instrumentation, ocean engineering system etc.

ANTARCTIC RESEARCH

Polar science in India received a major boost when the 14th expedition successfully put 'Maitri'—the Indian station on the icy continent—on the electronic mail network through the INMARSAT, making it possible to transmit online data to various laboratories in the country. Besides acting as a morale booster to the wintering team members, who now get to know the day-to-day happenings around the world, despite being on the last frontier on earth, it has also facilitated online data transfer to the various participating laboratories in the country.

Addressing a debriefing function of the 14th expedition in New Delhi on July 15, 1995, the Union Minister of State for Ocean Development, Mr. Eduardo Faleiro, said the expedition saw a distinct impetus to the scientific strength of the team which was brought to almost the same size as the logistics component. Of the 64 members that went on this expedition, 31 were scientists and 33 logistics personnel.

Four experiments were conducted to further the biodiversity programme. Besides inspecting the algal colonisation in lakes around 'Maitri', scientist tried to identify low temperature bacteria of human and other organic wastes. were conducted on Phylum Tardigrada species for ecomonitoring and was made to prepare a census of mammals (seals) and birds (penguins).

Antarctica provides an excellent opportunity for the conduct of scientific research for the benefit of all mankind. It is a pristine laboratory, of worldwide significance, which has enabled researchers to detect and monitor global environment phenomena such as the depletion of atmospheric ozone, global warming and sea level changes. Antarctic meteorological research has provided data essential to forecasting in the southern hemisphere.

Geological research provides important information about the heat exchange budget and Antarctica's influence on weather and climate. Geological and geophysical research in Antarctica provides new insights into global geological history and the formation of continents. The earth's geomagnetic field makes Antarctica particularly

well suited to the study of solar-terrestrial interactions and cosmic rays which travel from outside our galaxy.

The environment of Antarctica provides unique opportunities to study the specialised adaptations of organisms with their environment and biological research in providing data essential for decision-making about marine living resources. Human biology and medicine provides information on the physiological adaptation of man to extreme climates and isolation.

A brain child of Mrs. Indira Gandhi, India's Antarctic expedition started in 1981 and has become a regular feature. About 1,000 personnel from 45 scientific institutes and laboratories have so far participated in the expeditions. The 14 expeditions to Antarctica have provided India with a series of valuable benefits besides establishing the lithological correlation between peninsular India and Antarctica as part of Gondwanaland reconstruction.

An analysis of the research findings of these expeditions showed that India benefitted in forecasting its monsoons and in developing human adaptations in the higher reaches of the Himalayas like Siachen. Cold temperature technology and long distance communication could be indigenised.

The information collected from this remote continent and the surrounding oceans is now yielding insights into the evolutionary history of earth and the future sustenance of human society by addressing the problems of global warming, green house effect and ozone hole phenomenon.

The permanent weather observatory at India's station, 'Maitri', continuously recorded the various meteorological parameters that could be eventually used for understanding the weather phenomenon over the southern oceans. Some of this data was transferred on a real time basis to the global telecom network.

India has benefitted from the studies on green house gases and ozone hole and its influence over the heat budget of the southern Indian Ocean.

India could learn deciphering remedial measures for the adverse effect of geomagnetic storms on propagation techniques of long distance communication.

Glaciological investigations in Antarctica and their correlation with the Himalayan glaciers

would be of great use to India. Studies on human adaptations in cold conditions could be applied to higher reaches of Himalayas like Siachen.

Microbes present in Antarctic could be used for human and organic waste degradation in cold regions like Siachen. Trained manpower was now available to work in extreme cold, harsh and isolated conditions.

The geological map of Schimasher basin and Wothat mountains helped in understanding the geo-resource distribution in terms of Gondwana correlation.

The 14th Indian expedition prepared a hydrographic chart of approach waters to the Indian bay of Antarctica. It monitored the dynamics of glacial front movement of Dakshin Gangotri glacier. The 16th expedition was sent in December 1996.

23. Major Science Research Institutions

PHYSICAL AND EARTH SCIENCES

Central Electronics Engineering Research Institute, Pilani
Central Scientific Instruments Organisation, Chandigarh
National Geo-Physical Research Institute, Hyderabad
National Institute of Oceanography, Panaji (Goa)
National Physical Laboratory, New Delhi
National Science Centre, New Delhi

CHEMICAL SCIENCES

Central Electro-Chemical Research Institute, Kolkata
Central Fuel Research Institute, Dhanbad
Central Salt and Marine Chemical Research Institute, Bhavnagar
Indian Institute of Petroleum, Dehra Dun
National Chemical Laboratory, Pune.

BIOLOGICAL SCIENCES

Central Drug Research Institute, Lucknow
Central Food Technological Research Institute, Mysore
Central Institute of Medicinal and Aromatic Plants, Lucknow
Central Leather Research Institute, Chennai
Central Public Health Engineering Research Institute, Nagpur
Centre for Cellular and Molecular Biology, Hyderabad
Indian Institute of Chemical Biology, Calcutta
Industrial Toxicology Research Centre, Lucknow
Institute of Microbial Technology, Chandigarh
National Botanical Research Institute, Lucknow

ENGINEERING

Central Building Research Institute, Roorkee
Central Glass and Ceramic Research Institute, Jadavpur (Calcutta)
Central Mechanical Engineering Research Institute, Durgapur (West Bengal)
Central Mining Research Station, Dhanbad (Bihar)
Central Road Research Institute, New Delhi
Electrical Research and Development Association, Vadodara
National Aeronautical Laboratory, Bangalore
National Environment Engineering Research Institute, Nagpur
National Metallurgical Laboratory, Jamshedpur
Structural Engineering Research Centre, Chennai, Ghaziabad and Roorkee

INFORMATION SCIENCES

Indian National Scientific Documentation Centre, New Delhi
National Institute of Science, Technology and Development Science, New Delhi

AGRICULTURE RESEARCH

Central Agricultural Research Institute, Port Blair and Bhopal
Central Arid Zone Research Institute, Jodhpur
Central Institute for Cotton Research, Nagpur
Central Marine Fisheries Research Institute, Cochin
Central Plantation Crops Research Institute, Kasaragod (Kerala)
Central Potato Research Institute, Shimla
Central Rice Research Institute, Cuttack
Central Rubber Crops Research Institute, Thiruvananthapuram

Central Soil and Water Conservation Research
and Training Institute, Dehra Dun
Central Soil Salinity Research Institute, Karnal
Central Tobacco Research Institute,
Rajahmundry

Cotton Technological Research Laboratory,
Mumbai

Indian Agricultural Research Institute, New Delhi
Indian Grassland and Fodder Research
Institute, Jhansi

Indian Institute of Horticultural Research,
Bangalore

Indian Institute of Soil Science, Bhopal
Indian Institute of Sugarcane Research,
Dilkusha, Lucknow

Indian Lac Research Institute, Ranchi
Indian Veterinary Research Institute, Izatnagar
Jute Agricultural Research Institute, 24
Parganas, Barrackpore (West Bengal)

Jute Technological Research Laboratory,
Calcutta

National Bureau of Plant Genetic Resources,
New Delhi

National Dairy Research Institute, Karnal
National Institute of Animal Genetics, Karnal
National Research Centre for Groundnut,
Junagarh

SCIENTIFIC MUSEUMS

Birla Industrial and Technological Museum,
Calcutta

Indian National Scientific Documentation Centre,
New Delhi

Visvesvaraya Industrial and Technological
Museum, Bangalore

COOPERATIVE RESEARCH

Ahmedabad Textile Industry's Research
Association, Ahmedabad

Automotive Research Association of India,
Mumbai

Bombay Textile Research Association, Mumbai
Cement Research Institute of India, Ballabgarh
Indian Jute Industries Research Association,
Calcutta

Indian Plywood Industries' Research Institute,
Bangalore

Silk and Art Silk Mills' Research Association,
Mumbai

South India Textile Research Association,
Coimbatore

Tocklai Experimental Station, Jorhat
Wool Research Association, Mumbai

MEDICAL RESEARCH

All-India Institute of Medical Sciences, New
Delhi

All-India Institute of Speech and Hearing,
Mysore

Cholera Research Centre, Calcutta

Indian Council of Medical Research, New Delhi

Institute for Research in Reproduction, Mumbai

National Institute of Cholera and Enteric
Diseases, Calcutta

National Institute of Occupational Health,
Ahmedabad

National Institute of Nutrition, Hyderabad

National Institute of Virology, Pune

Post-Graduate Institute of Medical Education
and Research, Chandigarh

Tuberculosis Research Centre, Chennai

STUDY OF DISEASES AND TREATMENT

All-India Institute of Hygiene and Public Health,
Calcutta

Cancer Institute, Chennai

Central Drugs Laboratory, Calcutta

Central Leprosy Teaching and Research
Institute, Chingleput

Chittaranjan Cancer Research Centre, Calcutta

Indian Cancer Research Centre, Mumbai

National Institute of Communicable Diseases,
Delhi

National Tuberculosis Institute, Bangalore

School of Tropical Medicine, Calcutta

Vallabhbhai Patel Chest Institute, Delhi

MICRO-BIOLOGY AND RELATED STUDIES

Central Research Institute, Kasauli

Hallikine Institute, Mumbai

King Institute of Preventive Medicine, Guindy,
Chennai

Pasteur Institute, Coonoor

DEPARTMENTAL RESEARCH CENTRES

Anthropological Survey of India, Calcutta

Central Water Power Research Station,
Khadakvasia (Pune)

Central Power Research Institute, Bangalore
and Bhopal

Forest Research Institute, Dehra Dun

Geological Survey of India, Calcutta

Indian Institute of Tropical Meteorology, Pune
 Indian Institute of Geomagnetism, Mumbai
 Indian Roads Congress, New Delhi (Ministry of Transport)
 Telecommunication Research Centre, New Delhi (P&T Department)
 Research Designs and Standards Organisation, Lucknow (Railways)

NUCLEAR RESEARCH

Atomic Energy Commission, Mumbai
 Bhabha Atomic Research Centre, Trombay (Mumbai)
 Electronics Corporation of India, Hyderabad
 High Altitude Research Laboratory, Gulmarg (Kashmir)
 Indian Rare Earths Ltd., Alwaye
 Radio Astronomy Centre, Ootacamund
 Saha Institute of Nuclear Physics, Calcutta

Tata Institute of Fundamental Research, Mumbai
 Tata Memorial Centre, Mumbai
 Uranium Corporation of India, Jaduguda (Bihar)

SPACE RESEARCH

Indian Scientific Satellite Project, Bangalore
 Indian Space Research Organisation, Bangalore
 Physical Research Laboratory, Ahmedabad
 Propelling Fuel Complex, Thiruvananthapuram
 Satellite Launch Vehicle Project, Thiruvananthapuram
 Space Applications Centre, Ahmedabad
 Space Commission, Bangalore
 Srihankota Range, Srihankota (Andhra Pradesh)
 Thumba Equatorial Rocket Launching Station, Thumba, Thiruvananthapuram
 Vikram Sarabhai Space Centre, Thiruvananthapuram

24. Commissions, Corporations and Other National Organisations

COMMISSIONS

Atomic Energy Commission: India recognised the importance of atomic energy quite early and the Atomic Energy Commission was set up in August 1948 to look after atomic energy activities in the country. The functions of the Atomic Energy Commission are: (i) to organise research in atomic energy for peaceful purposes, (ii) to train atomic scientists in the country; (iii) to promote nuclear research in commission's own laboratories as well as in universities and research institutions in India; (iv) to undertake prospecting of atomic minerals in India and to extract such minerals for use on industrial scale.

Commission for Agricultural Costs and Prices: The Commission on Agricultural Costs and Prices (CACP), which was earlier known as Agricultural Prices Commission, advises the Government on a continuing basis, about the minimum support prices for the agricultural produce. The Government fixes the procurement or support prices for important crops on the basis of the recommendations of the CACP. While recommending the support price for a particular commodity, the Commission makes comprehensive analysis of the costs, changes in input prices, relative prices of the price of other commodities and the effect of the price of this commodity on the rest of the economy.

Census Commission: Census in India is a massive operation. The practice in the country is about hundred years old. Census Commission functioned on temporary basis till 1964. It was in that year that the office of the Registrar General and Census Commissioner of India was established. The first all-India census, though not synchronously taken, was completed in 1872. Since 1881, census in India has been taken regularly every ten years. The census in 1971 marked the completion of 100 years of decennial census-taking in the country. The work on the 1991 census began in May 1990 and was completed by February 1991.

Central Forestry Commission: The Central Forestry Commission, with the Inspector General of Forests as its chairman, was set up in 1965 for effecting technical coordination, collection and dissemination of information on forestry. The Commission also acts as technical sub-committee servicing the Central Board of Forestry.

Central Water Commission: It is responsible for initiating and coordinating, in consultation with State Governments, schemes for control, conservation and utilisation of water resources for purposes of irrigation, navigation, flood control throughout the country.

Election Commission: The functions of the Election Commission—a statutory body established under Article 324 of the Constitution—

superintendence, direction and control of the preparation of the electoral rolls for, and the conduct of all elections to Parliament and the State legislatures and all elections to the offices of the President and Vice-President. The Election Commission has also (i) to lay down general rules for election, (ii) to determine constituencies and to prepare electoral rolls, (iii) to give recognition to the political parties, (iv) to allot election symbols to political parties and individuals contesting the elections, and (v) to appoint election tribunals to decide disputes and doubts arising as a result of election to Parliament and State legislatures.

Electronics Commission: The Electronics Commission, which came into being in 1971, is the nodal agency responsible for the healthy growth of the electronics industry in India. It is assisted by the Department of Electronics for executive duties.

Energy Commission: The Government on March 12, 1981 announced the constitution of a Commission for Additional Sources of Energy (CASE). It formulates policies and programmes for development of new and renewable sources of energy. It coordinates and intensifies research and development activities in new and renewable sources of energy. It also ensures implementation of Government's policies in regard to all matters concerning new and renewable sources of energy.

Finance Commission: Under Article 280 of the Constitution, a Finance Commission is to be constituted every fifth year or at such earlier time as the President considers necessary to make recommendations to President as to (i) the distribution between the Union and the States of the net proceeds of taxes as enumerated in the Constitution and the allocation between the States of the respective shares of such proceeds; (ii) the principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India; and (iii) any other matter referred to the Commission by the President in the interests of sound finance. The recommendations of the Commission together with any explanatory memorandum as to the action taken thereon are laid before each House of Parliament.

Floods Commission: The Government of India constituted a national floods commission in July 1976. The commission is known as Rashtriya Barh Ayog and has been entrusted with the task of conducting a study in depth of the present approach and programmes of flood control measures and evolve a coordinated, integrated and scientific approach to the flood control problem and draw up a national plan fixing priorities.

Indo-Bangladesh Joint Rivers Commis
The Commission was established in 1973 to maintain liaison between India and Bangladesh order to ensure the most effective joint effort maximising the benefits from common river systems to study flood control and irrigation projects that the water resources of the region can be utilised on an equitable basis for the maximum benefits of the peoples of the two countries. It formulates proposals for carrying out coordinated research on problems of flood control affecting both the countries.

Khadi and Village Industries Commission
Established in 1957, the Khadi and Village Industries Commission (KVIC) is looking after 1 and 26 village industries. The functions of KVIC are to plan, organise and implement programmes for the development of khadi and village industries. The activities of the KVIC include training of artisans, supervisory and management personnel; building up of reserves of raw materials, tools, implements and equipment and making them available to the programme implementing agencies at reasonable prices. It also helps in marketing of goods produced by khadi and village industries.

Law Commission: The Law Commission was first constituted in 1955 and since then it has been reconstituted from time to time. The need for periodical revision of the form and content of law has been recognised for a long time in India. Changing social and economic conditions as well as changed concepts on certain ethical issues necessitate a review of the existing law from time to time. Without a standing body which would be entrusted with a systematic review of the law, this work cannot be performed satisfactorily. With this aim in view, the Law Commission in India brings the law up to date.

Mandal Commission: It was appointed to look into the grievances of the backward classes. It submitted the report in 1980 recommending 27 per cent reservations for backward classes in service which remained unaccepted by the Government. The report supported the continuation of caste-based reservations, identified over 450 "backward classes" comprising 52 per cent of the country's population, and recommended 27 per cent of seats in academic institutions and jobs in Government organisations for these classes. The recommended reservation is in addition to the existing 22.5 per cent job reservations for Scheduled Castes and Scheduled Tribes. The National Front Government accepted the recommendations of the Commission for implementation on August 7, 1990, and announced

that 25 per cent of the jobs in Central Government and public sector undertakings will be reserved for the socially and educationally backward classes. The recommendation has since been accepted and implemented by the Central and State Governments. For reservations for the other backward classes in the public sector undertakings and financial institutions have also been provided.

Planning Commission: The Planning Commission at the Centre is the apex body in the planning machinery of the country. It is charged with the responsibility of formulating the national plans and of keeping a close watch on growth rates of the various sectors of the economy.

The Planning Commission was set up in March 1950 by a Resolution of the Government of India. The Resolution stated that the Planning Commission will:

1. make an assessment of the material, social and human resources of the country; including technical personnel, and investigate the possibilities of augmenting such or these resources as are found to be deficient in relation to the nation's requirements;

2. formulate a plan for the most effective and balanced utilisation of country's resources;

3. on a consideration of priorities define the stages in which the plan should be carried out and propose the allocation of resources to the due completion of each stage;

4. indicate the sectors which are lending to rapid economic development, and determine the conditions which, in view of the current social and political situation, should be established for the successful execution of the plan;

5. determine the nature of the machinery which will be necessary for securing the successful implementation of each stage of plan in all its aspects;

6. address from time to time the progress achieved in the execution of each stage of the plan and recommend the adjustments of policy and measures that such progress may show to be necessary; and

7. make such mention of ancillary recommendations as appear to be appropriate either for facilitating the discharge of the duties assigned to it, or, on a consideration of the prevailing economic conditions, current policies, measures and development programmes as to an extension of such specific schemes as may be referred to it for advice by the Central or State Government.

Apart from the other objectives listed in the Resolution under which the Planning Commission

was established, its most important task is that of formulating the plans for development and assessment of their performance.

Space Commission: The primary aims of the Indian space programme are the application of space science and technology to further national developmental objectives in mass communication and education via satellites, the survey and management of natural resources through remote sensing technology from space platforms and development of space technology with the maximum degree of self-reliance. The organization envisaged with the realisation of these aims is the Space Commission headed by the Department of Space, with Bangalore being the headquarters of both. The Chairman of the Space Commission is also the Secretary to Government of India in the Department of Space.

Staff Selection Commission: Earlier known as Subordinate Services Commission, the Staff Selection Commission on the lines of the Union Public Service Commission, was constituted for the purpose of recruitment to non-technical Class II posts in different departments of the Government of India and its subordinate offices. The Commission has its headquarters in New Delhi and its regional offices are opened at Mumbai, Jaipur, Guwahati, Chennai and Madras. It has one sub-regional office at Patna.

The Commission was set up on July 1, 1975 on the recommendations of the Administrative Reforms Commission. The representations received by the Commission are: (i) Direct Grade Examination, (ii) Auditor/Junior Accountants Examination, (iii) inspectors of forests Test, Central Stores Etc. Examination, (iv) Sub-ordinates Executive, Delhi Police Examination, (v) Test for selection of candidates for the post of Sub-ordinates of Police in the CB and Central Finger Print Bureau, (vi) Stenographers Examination via Interview Examination, (vii) investigators Etc. Examination, (ix) Joint Testes and Joint Testations Examinations, (x) Transmission Executives Examination, and (xi) Limited Departmental Competitive Examinations for Junior Division Grade, Grade C Stenographers and Dental Grade (from Group 'D' post). The Commission deals not only with the recruitment to posts for which recruitment is made by the Railway Recruitment Board and national recruitment.

Union Public Service Commission For recruitment to civil services and posts under the Union Government, the Constitution provides for an independent body known as the Union Public

superintendence, direction and control of the preparation of the electoral rolls for, and the conduct of all elections to Parliament and the State legislatures and all elections to the offices of the President and Vice-President. The Election Commission has also (i) to lay down general rules for election, (ii) to determine constituencies and to prepare electoral rolls, (iii) to give recognition to the political parties, (iv) to allot election symbols to political parties and individuals contesting the elections, and (v) to appoint election tribunals to decide disputes and doubts arising as a result of election to Parliament and State legislatures.

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Mandal Commission: It was appointed to look into the grievances of the backward classes. It submitted the report in 1980 recommending reservations for backward classes in services which remained unaccepted by the Government. The report supported the continuation of caste-based reservations, identified over 450 "backward classes" comprising 52 per cent of the country's population, and recommended 27 per cent of the seats in academic institutions and jobs in Government organisations for these classes. The recommended reservation is in addition to the existing 22.5 per cent job reservations for the Scheduled Castes and Scheduled Tribes. The National Front Government accepted the recommendations of the Commission for implementation on August 7, 1990, and announced

that 27 per cent of the jobs in Central Government and public sector undertakings will be reserved for the socially and educationally backward classes. The recommendation has since been accepted and implemented by the Central and State Governments. Job reservations for the other backward classes in the public sector undertakings and financial institutions have also been provided.

Planning Commission: The Planning Commission at the Centre is the apex body in the planning machinery of the country. It is charged with the responsibility of formulating the national plans and of keeping a close watch on growth trends on the various sectors of the economy.

The Planning Commission was set up in March 1950 by a Resolution of the Government of India. The Resolution stated that the Planning Commission will:

- (1) make an assessment of the material, capital and human resources of the country, including technical personnel, and investigate the possibilities of augmenting such of these resources as are found to be deficient in relation to the nation's requirements;

- (2) formulate a plan for the most effective and balanced utilisation of country's resources;

- (3) on a determination of priorities, define the stages in which the plan should be carried out and propose the allocation of resources for the due completion of each stage;

- (4) indicate the factors which are tending to retard economic development, and determine the conditions which, in view of the current social and political situation, should be established for the successful execution of the plan;

- (5) determine the nature of the machinery which will be necessary for securing the successful implementation of each stage of plan in all its aspects;

- (6) appraise from time to time the progress achieved in the execution of each stage of the plan and recommend the adjustments of policy and measures that such appraisal may show to be necessary; and

- (7) make such interim or ancillary recommendations as appear to it to be appropriate either for facilitating the discharge of the duties assigned to it, or, on a consideration of the prevailing economic conditions, current policies, measures and development programmes; or on an examination of such specific problems as may be referred to it for advice by the Central or State Government.

Apart from the other objectives listed in the Resolution under which the Planning Commission

was established, its most important task is that of formulating the plans for development and assessment of their performance.

Space Commission: The primary aims of the Indian space programme are the application of space science and technology to further national developmental objectives in mass communication and education via satellites, the survey and management of natural resources through remote sensing technology from space platforms and development of space technology with the maximum degree of self-reliance. The organisation entrusted with the realisation of these aims is the Space Commission backed by the Department of Space, with Bangalore being the headquarters of both. The Chairman of the Space Commission is also the Secretary to Government of India in the Department of Space.

Staff Selection Commission: Earlier known as Subordinate Services Commission, the Staff Selection Commission on the lines of the Union Public Service Commission, was constituted for the purpose of recruitment to non-technical Class III posts in different departments of the Government of India and in subordinate offices. The Commission has its headquarters in New Delhi and its regional offices are located at Mumbai, Calcutta, Guwahati, Chennai and Allahabad. It has one sub-regional office at Raipur.

The Commission was set up on July 1, 1976, on the recommendations of the Administrative Reforms Commission. The major examinations held by the Commission are: (i) Clerks' Grade Examination, (ii) Auditors/Junior Accountants' Examination, (iii) Inspectors of Income Tax, Central Excise, Etc., Examination, (iv) Sub-Inspectors (Executive), Delhi Police Examination, (v) Test for selection of candidate for the post of Sub-Inspectors of Police in the CBI and Central Finger Prints Bureau, (vi) Stenographers' Examination (vii) Assistants' Examination, (viii) Investigators, Etc., Examination, (ix) Hindi Teachers and Hindi Translators Examinations, (x) Transmission Executives Examination, and (xi) Limited Departmental Competitive Examinations for Upper Division Grade, Grade 'C' Stenographers and Clerks' Grade (from Group 'D' staff). The Commission does not deal with the recruitment to posts for which recruitment is made by the Railway Recruitment Boards and industrial establishments.

Union Public Service Commission: For recruitment to civil services and posts under the Union Government, the Constitution provides an independent body known as the Union

Service Commission. The chairman and members of the Commission are appointed by the President. To ensure independence of the Commission, the Constitution debars its chairman from further employment either under the Government of India or the Government of a State. A member of the Commission is, however, eligible for appointment as chairman of that Commission or of a State Public Service Commission.

University Grants Commission: The UGC, set up in 1953, promotes and coordinates university education and determines and maintains standards of teaching, examination and research in the universities. It has the authority to enquire into the financial needs of the universities and to make appropriate grants to different universities and implement development schemes. It advises on the establishment of new universities and other matters referred to it.

CORPORATIONS

Air India: Air India Limited was formed as a public limited company on July 29, 1946 and took over Tata Airlines with all its aircraft, equipment, engineering facilities, trained personnel, etc. Air India International Limited, a new company was formed in 1948 after the Government approved the scheme for operation of air services between India and the U.K. The Government decided on complete nationalisation and in March 1953, the Air Corporation Act was passed and Air India International Limited was nationalised as a public corporation from August 1, 1953. Air India thus established as a statutory corporation on June 15, 1953 and took over the operations of Air India International Limited from August 1, 1953. The Corporation operates air services to the five continents. India has bilateral air services agreements with 90 countries.

The Corporation is a service organisation in the field of air transport with the primary objective of providing safe, efficient, adequate, economical and properly co-ordinated international air services and to develop such services to the best advantage for transportation of passengers, cargo, mail, etc. The Corporation also provides handling services, both technical and commercial, to other airlines.

Bharat Petroleum Corporation Limited: Bharat Petroleum Corporation Limited is a wholly owned Central Government undertaking and the successor to Burmah-Shell Group of Companies which were taken over in January 1976. The Corporation owns a refinery in Mumbai.

Coal India Limited: Coal India Limited is a holding company with the responsibility for management of the entire coal mines owned by the Central Government. It was set up in the year 1975 for better management and administrative control. The Company continued to hold seven fully owned subsidiary companies, viz.:

(i) Eastern Coalfields Ltd., with its registered office at Sanctoria, Burdwan, West Bengal. (ii) Bharat Coking Coal Ltd., with its registered office at Dhanbad, Bihar. (iii) Central Coalfields Ltd., with its registered office at Ranchi, Bihar. (iv) Western Coalfields Ltd., with its registered office at Nagpur, Maharashtra. (v) South-Eastern Coalfields Ltd., with its registered office at Bilaspur, Madhya Pradesh. (vi) Northern Coalfields Ltd., with its head office at Singrauli. (vii) Mahanadi Coalfields Ltd. (viii) Central Mines Planning and Design Institute Ltd., non-coal producing unit, monitors all research and development works in coal sector with the registered office at Dhanbad, Bihar.

Computer Maintenance Corporation: It provides a complete range of computer support service within the country. After its setting up in 1975, the CMC's operations have stabilised and it has expanded not only in its hardware maintenance base but also in other areas of computer support. After the withdrawal of IBM from India since 1978, the CMC is a total computer support company in India, besides being maintenance organisation.

Central Inland Water Transport Corporation: The CIWTC, set up in 1967 at Calcutta, operates the river services between Calcutta and Assam via Bangladesh and between India and Bangladesh. Its other activities include shipbuilding and ship repairing, stevedoring and clearing agency at Calcutta and dredging on the Bhagirathi river.

Central Warehousing Corporation: The Central Warehousing Corporation, New Delhi, acquires and builds godowns and warehouses for storage of agricultural products, inputs, implements and notified commodities offered by individuals, cooperative societies and other organisations.

Credit Guarantee Corporation: The Credit Guarantee Corporation of India, which was set up in January 1971 to operate a scheme of credit guarantees to encourage the banks to undertake financing of small borrowers on a much larger scale without excessive risks, was merged with the Deposit Insurance Corporation in May 1978. The purpose of this merger is to serve better and provide credit guarantee to commercial banks. The undertaking is known as the Deposit Insurance and Credit Guarantee Corporation.

Deposit Insurance and Credit Guarantee Corporation: The Deposit Insurance Corporation was set up in 1962 to provide a measure of protection to the small depositors. Every commercial bank in India and every eligible cooperative bank in any of the States and Union Territories to which the deposit insurance scheme has been extended by the Central Government is registered as an insured bank. The insured banks are required to pay a premium at the rate of 4 paise per annum for every hundred rupees to the Corporation on their assessable deposits.

Electronics Trade and Technology Development Corporation: It offers services to the electronics industry, particularly to the small scale sector, in making available inputs of raw materials and components and testing and measuring instruments at competitive prices.

Engineers India Limited : The EIL was established in 1965 mainly to indigenise engineering and project management capabilities in the petroleum sector. Today, it provides a complete range of project services in such fields as petroleum refining, petrochemicals, oil, gas processing pipelines, ocean engineering, ports and harbours, fertilisers and nonferrous metallurgy, cement, paper, etc. The company has also set up joint ventures to provide certification and third party inspection services to the Indian as well as overseas clients.

Film Finance Corporation: The Film Finance Corporation was set up in 1960 by the Government of India with the objective of raising the standard of films in the country and helping the development of Indian cinema in all possible ways. For achieving this objective, the Corporation advances finance for the production of quality films, canalises import of all raw stock required for the film industry, imports films from international market and sponsors film festivals and film weeks.

Food Corporation of India: The Food Corporation of India, which was set up in 1965, operates as the sole agency of the Central Government for procurement, import, distribution, storage, movement and sale of foodgrains. It thus protects the interests of both the farmer and the consumer. It also performs other diversified activities such as rice milling and production of nutritious processed food.

General Insurance Corporation of India: In pursuance of the Insurance Business (Nationalisation) Act, the General Insurance Corporation of India was registered as a Government company on November 22, 1972, for the purpose of superintending, controlling and carrying on general insurance business. On

January 1, 1973, all the nationalised general insurance companies were merged into four subsidiaries of the General Insurance Corporation viz. : (i) National Insurance Company Limited, (ii) New India Insurance Company Limited, (iii) Oriental Insurance Company Limited; and (iv) United India Insurance Company Limited. These companies are free to carry on insurance business in competition with each other. The General Insurance Corporation and its subsidiaries have the exclusive privilege of carrying on general insurance business in India.

Hindustan Petroleum Corporation Limited: Government of India acquired the undertakings in India of ESSO Eastern Inc. in March 1974, and vested the same in Hindustan Petroleum Corporation Limited, and subsequently amalgamated Lube India Limited with it on July 14, 1974. The Corporation has two refineries situated at Mumbai and Visakhapatnam.

India Tourism Development Corporation: The ITDC, set up in 1966, is the only multi-unit undertaking for the development of tourism in the country. It looks after the construction and management of hotels, motels and travellers' lodges, provision of transport facilities for tourists, production of tourist publicity and promotional material, provision of entertainment and management of 'duty free' shops at international airports.

Indian Airlines Corporation: Indian Airlines was formed in 1953 by an Act of Parliament by nationalising eight scheduled airlines. The main activity of the Corporation is to provide safe, efficient, adequate, economical and properly coordinated passenger, freight and mail transportation on the internal network in the country and 14 countries, viz., Pakistan, Maldives, Nepal, Sri Lanka, Bangladesh, Malaysia, Thailand, Singapore, UAE, Oman, Myanmar, Kuwait, Qatar and Bahrain. Its operations cover 72 destinations including 16 abroad.

Indian Oil Corporation: The Corporation was established on September 1, 1964 with the merger of Indian Refineries Limited and Indian Oil Company Limited. In addition, it acquired the refining and distribution operations of the Assam Oil Company Limited on October 14, 1981. The Corporation has three divisions, viz., (i) Refineries and Pipelines, (ii) Marketing, (iii) Assam Oil.

The market share of the corporation by April 1994 was 56.8 per cent of the total oil industry's sales.

The IOC has six refineries, viz., Guwahati Refinery, Barauni Refinery, Koyali Refinery, Haldia Refinery, Mathura Refinery and Digboi Refinery.

Industrial Credit and Investment Corporation of India: It was established in 1955 as a public sector undertaking to encourage and assist industrial organisations in India. It is a privately owned and privately managed joint stock company. It is essentially designed to mobilise international finance to develop and extend private enterprise in the country.

Industrial Finance Corporation of India: The Industrial Finance Corporation of India (IFCI), which was established under an Act of Parliament in July 1948 and is now a subsidiary of the Industrial Development Bank of India, provides long-term loan assistance to industrial concerns, both in the public and private sectors. The corporation also provides training in modern management techniques to its clients.

Life Insurance Corporation (LIC): The Life Insurance Corporation of India is the sole public sector undertaking engaged in the business of life insurance. Prior to the establishment of LIC, there were in the country, over three hundred Indian as well as foreign companies engaged in life insurance business. All these companies were nationalised with effect from September 1, 1956 and the Life Insurance Corporation of India was set up to take over the assets and liabilities of the erstwhile life insurance companies and to exclusively carry on life insurance business in India. The main aim of nationalisation was to achieve greater spread of business, more particularly in the rural areas so that the benefits of insurance cover are made available to the largest number of people of all sections of society.

Minerals and Metals Trading Corporation: In 1963, the Government of India decided to bifurcate the State Trading Corporation to establish another corporation known as Minerals and Metals Trading Corporation of India. This new Corporation came into existence in October 1963, and has taken up all work relating to minerals and metals, which was being handled previously by the State Trading Corporation. The main objectives of the Minerals and Metals Trading Corporation are: (a) to organise and explore the exports of mineral ores and to import metals, and (b) to undertake development of new markets for export of minerals and ores, with a view to diversify their exports.

National Hydroelectric Power Corporation: The National Hydroelectric Power Corporation was incorporated as a Company under the Companies Act, 1956 on November 7, 1975 and the Corporation started effective functioning from June 1, 1976. The main objectives of the Corporation are:

(i) to plan, promote and organise an integrated and efficient development of hydroelectric power in all its aspects including planning, investigation, research, design and preparation of preliminary, feasibility and definite project reports, construction, generation, operation and maintenance of hydroelectric power stations and projects, transmission, distribution and sale of power generated at hydroelectric stations, in accordance with the national economic policy and objectives laid down by the Central Government from time to time; and

(ii) to undertake, where necessary, the construction of inter-State transmission lines and ancillary works for timely and co-ordinated inter-State exchange of power.

The corporation has constructed the Baira Siul Project in Himachal Pradesh and Loktak Project in Manipur. The work on Salal, Charera, Tanakpur, Dulhasti Projects is progressing. The corporation is also taking up Dhaulganga and Goriganga Projects in U.P., Uri Project in Jammu and Kashmir and Rangit Project in Sikkim.

National Industrial Development Corporation: The National Industrial Development Corporation was set up in 1954 for the rehabilitation and modernisation of cotton textiles and jute industries and for the expansion of machine tool units. It is now providing engineering consultancy services both at home and abroad.

National Mineral Development Corporation: The NMDC, Hyderabad, was set up in 1968 for exploitation of minerals other than oil and natural gas and coal. With the present set-up the corporation is concerned with the management of iron ore mines already developed by them at Bailadila in Madhya Pradesh and Donnalai mine in Karnataka. The corporation has also developed the diamond mines at Panna in Madhya Pradesh. The iron ore produced from the existing mines of the NMDC is earmarked for export.

National Minorities Development and Finance Corporation: The NMDFC was set up in September 1994 to assist weaker sections amongst minorities. It provides the critical input for prosperity, i.e., finance, for setting up self-employment ventures to the "backward sectors" of the minorities, i.e., Muslims, Sikhs, Christians, Buddhists and Parsis. It gives loans through State Minorities Development Corporation/State Channelising Agencies nominated by the State Government/Union Territory Administrations. The financial assistance is provided in engaging oneself in traditional trades as artisan, agriculture and allied activities. Technical trades for self-employment, for small

business, small scale and tiny industry and in transport and service sector. Women beneficiaries are given priority.

National Research Development Corporation: The NRDC, set up in 1953 with headquarters in New Delhi, acts as a link between research and industry. It is also entrusted with the task of promotion of inventive talent in the country. In the field of technology transfer, the NRDC has achieved significant success relating to production of cement based on vertical shaft kiln technology, flow improver for long distance waxing crude oil transport, energy-saving titanium anodes for chloralkali industry and development of certain processes in petroleum technology.

National Small Industries Corporation: The National Small Industries Corporation was established in 1955 with the view to assist, promote, develop and finance small scale industries in the country. The main functions of the Corporation are: (a) to secure Government orders for the small industries, (b) to provide loans, (c) to provide technical assistance, (d) to secure co-ordination between small scale and large scale industries so that the former produce goods required by the latter, and (e) to underwrite and guarantee loans from banks and other sources. Apart from providing finance, the Corporation has rendered valuable service in the field of supply of machinery on hire-purchase system to the small industries and in securing Government orders for small industrial units.

National Textile Corporation (NTC): The National Textile Corporation was established in April 1968 with the main objective of managing the sick textile units taken over by the Government. Initially, the Government took over the management of 16 mills in 1968, but the number increased to 103 units during 1972-73. With effect from April 1974, all these mills under Government's management were nationalised and their ownership transferred to the National Textile Corporation. Now there are 125 mills under the NTC.

National Thermal Power Corporation: National Thermal Power Corporation was constituted as a generating company in November 1975 for the purpose of construction, operation and maintenance of super thermal power stations and associated EHV transmission lines.

Oil India Limited: Oil India Limited (OIL), a public sector enterprise, is engaged in the exploration, production and transportation of crude oil from Assam and Arunachal Pradesh to the refineries in North-East India.

Oil and Natural Gas Corporation: The Oil and Natural Gas Directorate set up in 1956 under the Government of India was converted later on October 15, 1959 into "Oil and Natural Gas Commission", by an Act of Parliament with headquarters at Dehra Dun and project/units all over the country. Its main objectives are exploring and exploiting of hydro-carbons and transportation of crude oil and gas so as to achieve self-sufficiency. In 1993, the ONGC was converted into a public limited company under the Companies Act and named as the "Oil and Natural Gas Corporation".

Projects and Equipment Corporation: The Projects and Equipment Corporation was formed in 1971 as a subsidiary of the STC. To start with, the Engineering and Railways Equipment and Engineering Division of the STC were brought under it to form the nucleus of the new organisation. The main objectives of the corporation are to boost the export of engineering, industrial and railway equipment, to penetrate new markets and to foster export ventures and turnkey projects in the field of railway system.

Rural Electrification Corporation: The REC was set up with the objective of promoting rural electrification through financing rural electric cooperatives in the States. It also provides consultancy services to other countries on various aspects of rural development, including rural electrification.

State Financial Corporations: To provide finance to the small scale and medium sized industrial units, the State Financial Corporations have been set up in all the States. The Corporations extend assistance to small units on concessional rates in the specified backward areas.

State Industrial Development Corporations: In all States the State Industrial Development Corporations have been set up with a view to providing financial assistance to small industrial units and for the industrial development of backward regions.

State Trading Corporation: The STC was registered in 1956 as a state owned trading corporation. Its main objective is to enlarge the scope of India's exports and to arrange for essential imports. Its activities are directed towards the diversification of exports, expansion of existing markets and development of new markets for traditional and non-traditional products. The STC exports a wide range of products such as sugar, rice, coffee, tobacco, castor oil, leatherware, bulk commodities such as cement and salt, textiles and manufactured products.

Shipping Corporation of India: The SCI was formed on October 2, 1961 by the amalgamation of Eastern Shipping Corporation Ltd. and Western Shipping Corporation Ltd. It is engaged both in coastal and overseas trade. It operates a number of cargo liner services, passenger-cum-cargo services, overseas and coastal tanker services, dry bulk cargo services, overseas bulk carrier services and overseas tramp services.

Steel Authority of India Limited: The Steel Authority of India Limited (SAIL) was established as a holding company for the management of the public sector steel plants. The steel producing units under the ownership and management of the SAIL are Bhilai Steel Plant, Durgapur Steel Plant, Rourkela Steel Plant, Bokaro Steel Plant and the Indian Iron and Steel Company. The SAIL has also one Alloy Steel Plant at Durgapur under it. Salem Steel Plant in Tamil Nadu is the latest plant under the Steel Authority of India.

Trade Fair Authority of India: The functions of TFAI are those which were earlier performed by Directorate of Exhibitions and Commercial Publicity, Trade Fair Organisation and the Indian Council of Trade Fair Exhibitions. To give a new orientation to country's state policy through fairs and exhibitions, the TFAI was set up as a Government company. Its main functions are the participation in international trade fairs, holding exclusive Indian exhibitions abroad, organising exhibitions, fairs and specialised displays in India, providing assistance to Indian parties for direct participation in international fairs, organising commercial publicity through mass media, etc.

Unit Trust of India: The Unit Trust of India (UTI) was established in 1964 as a public sector investment institution for mobilising the savings of the community and for providing to the investors, particularly small and middle income groups, a medium of investment in industrial securities. The trust aims at encouraging small savings by providing facilities to various classes of investors for investment in Units of the face value of Rs.10 and Rs. 100. The trust invests money in various types of shares and securities. Not less than 90 per cent of the net income on the investment is distributed to the shareholders.

Vayudoot Limited: Vayudoot was registered as a private limited company under the Companies Act, 1956 on January 20, 1981 and converted into public limited company on February 17, 1983. The Company was formed as third level leader airline to operate its services in regions having difficult geographical terrains, slow means of transportation and poor communication facilities.

IMPORTANT ORGANISATIONS

Anthropological Survey of India: It conducts researches to record and understand the bi-cultural diversities of Indian population and to serve as information bank for national planning and development. It preserves and studies the ancient skeletal remains in the context of bi-cultural history of Indian population. It also carries out field and laboratory based investigations among the Indian population with emphasis on tribes and weaker sections on the problems of contemporary relevance. It has headquarters at Calcutta.

Bureau of Public Enterprises: The Bureau of Public Enterprises was set up in 1965 to provide managerial, advisory and performance monitoring services in various facets of public enterprises' management. The Bureau assists the Government in improving performance of the public enterprises, monitors annual performance of each public enterprise, conducts investigation and research to determine ways and means of improving performance of public enterprises, collects and compiles statistical data with regard to public enterprises, assists in appointment of senior management personnel, organises in-service training for managerial personnel and assists the Government in formation of new Government companies.

Central Board of Film Certification: Films can be exhibited in India only after they have been certified by the Central Board of Film Certification. The Board has headquarters at Bombay, with regional offices at Bangalore, Bombay, Calcutta, Hyderabad, Madras and Trivandrum. Producers apply to the Board and the Board examines the films and grants 'U' certificate for unrestricted public exhibition or an 'A' certificate for exhibition restricted to adults (above the age of 18 years). The Board may direct the applicant to carry out excisions or modifications before granting the certificate. It may also refuse the certificate if the film or any part of it is against the interest or the security of the state, friendly relations with foreign states, public order, decency, morality or involves defamation or contempt of court or is likely to incite the commission of an offence.

Comptroller and Auditor-General: The Comptroller and Auditor-General of India is appointed by the President. The procedure and the grounds for his removal from office are the same as for a Supreme Court Judge. He is not eligible for further office under the Union or a State Government after he ceases to hold his office. His reports on the accounts of the Union and of the States are submitted to the President.

and the respective Governments and are placed before Parliament and State legislatures.

Council of Scientific and Industrial Research: The CSIR, with its network of laboratories and research institutions, is a major instrument of scientific and industrial research under state auspices and supports research in universities and other centres of learning. The CSIR also maintains a register of scientists and technical personnel in the country. Since 1957, the Council is administering the Shanti Swarup Bhatnagar Memorial Awards in physical, chemical, biological sciences and mathematics.

Defence Research and Development Organisation: The principal responsibilities of DRDO relate to the design and development of new and sophisticated weapons and equipment based on the operational requirements, projected by the Services, to provide help in their indigenous production and to render scientific advice to the three Services as needed.

Film and Television Institute of India: Located in Pune, the FTII was set up in 1960 to impart training in the art and craft of film making. Training in television was added in 1971. It offers a three-year specialisation course in (1) motion picture photography, (2) film editing, (3) film direction with one-and-half years' integrated training, and (4) sound recording and sound engineering with one-year integrated training. In-service training for the employees of Doordarshan is also imparted here.

Forest Survey of India: On the recommendation of the National Commission on Agriculture, the Forest Survey of India was established in June 1981. The main activities of the Forest Survey of India are forest inventory and re-inventory, photo interpretation and mapping, data processing and training and some special studies.

Geological Survey of India: Established in 1851, the GSI, with headquarters in Calcutta, is the principal agency entrusted with all the geological activities in the country. It is responsible for the preparation of the geological, geochemical, geophysical maps of the country including the offshore areas, for the exploration and assessment of mineral resources in the country, for conducting all studies pertaining to the geotechnical problems, for rendering expert technical advice in connection with different engineering projects, and for carrying out environmental studies connected with the mining and urban development, land use, desert control, river and forest use, etc.

Indian Council of Agricultural Research: The ICAR is the apex body for formulating plans and

coordinating agricultural, animal husbandry and fisheries education and research and their application. In the field of agricultural education, it performs a role similar to that of the University Grants Commission.

Indian Council for Cultural Relations: The ICCR, New Delhi, established in 1950, strives to promote and strengthen cultural relations and mutual understanding between India and other countries. The main functions of the Council are reciprocal development of studies in India and foreign universities, publication in English and foreign languages on different aspects of Indian culture, exchange of cultural material with libraries and museums abroad, exchange of cultural delegations, organisation of lectures, seminars and conferences. The Council also administers the Jawaharlal Nehru Award for the promotion of peace and international understanding.

Indian Council of Historical Research: With headquarters in New Delhi, the Council enunciates and implements a national policy of historical research and encourages scientific writing of history. It operates research projects, offers fellowships and undertakes publication and translation work.

Indian Council of Medical Research: Set up in 1911 with headquarters in New Delhi, the ICMR conducts medical research in India through a network of research institutes and centres covering a wide spectrum. For this purpose, the Council has 18 permanent research institutes and centres.

Indian Council of Social Science Research: With headquarters in New Delhi, the Council was set up to review the progress of social science research from time to time, to give advice to its users in Government or outside, to sponsor research programmes and give grants to institutions and individuals for research in the field of social sciences.

Indian Farmers Fertilisers Cooperative Ltd.: It is a unique cooperative venture in the field of large-scale fertiliser manufacture. It is one of the leading producers of fertilisers in the country. It has four operating units, one each at Karol and Kandla in Gujarat, and Phulpur and Aonia in U.P.

Indian Institute of Forest Management: Forests have acquired a multi-disciplinary dimension and an efficient implementation of forestry activities requires the tools of modern management techniques which were not available in this sector so far. To bridge this gap, the Indian Institute of Forest Management was established in March 1981 at Bhopal. The institute has a wide range of activities covering research, development and

management needs of the social forestry and farm forestry.

Indian Institute of Mass Communication: It is a centre for training and research in mass communication. Its instruction courses cover developmental journalism, the print media, audio-visual aids and films, radio and television, oral communication, traditional media, advertising, campaign planning and communication research.

Industrial Development Bank of India: The IDBI, which was set up on July 1, 1964, coordinates the activities of other financial institutions to supplement their resources to plan and promote industries of key significance to the industrial structure. As an apex financial institution, the IDBI has been assigned a special role for planning, promoting and developing industries to fill vital gaps in the industrial structure, providing technical and administrative assistance for promotion, management and expansion of industry, and undertaking market and investment research and surveys as also techno-economic studies in connection with development of industry.

Industrial Reconstruction Bank of India: The IRBI was set up in March 1985 by reconstituting the Industrial Reconstruction Corporation of India (IRCI), which was set up in 1971. It is mainly concerned with the rehabilitation and reconstruction of industrial units which have closed down or are facing closure by reconstruction of share capital, strengthening of management, provision of finance on soft terms, improvement in technology and labour relations.

National Archives of India: Located in New Delhi, it is the largest and perhaps the best organised record repository in Asia. It has in its custody several million public records, maps, private papers, microfilms, books, occupying a total length of 30 km of shelf space. It assists Ministries and Departments in their record management programmes, acquisition of private papers of national importance and micro-film copies of record of Indian interest from abroad.

National Bank for Agriculture and Rural Development: The National Bank for Agriculture and Rural Development was set up in July 1982 for co-ordinating the activities of institutions engaged in rural finance and for augmenting the financial resources of these institutions. The NABARD, has the function of acting as a refinancing institution for not only agriculture, but also for the agencies providing credit to small scale industries, cottage and village industries, artisans, craftsmen

and other rural production units. The establishment of NABARD is thus a step in the direction of expanding and strengthening the structure of rural credit including the finance to cottage and small scale industrial units.

National Book Trust: The NBT, which was set up in 1957, produces and encourages the production of good literature and makes it available at low prices to libraries, educational institutions and the public. Since 1970, it has been subsidising the publication of university level books in English by Indian authors. The NBT also brings out translations of representative books from one language into several other Indian languages. It organises World Book Fairs, National Book Fairs and regional book exhibitions. It also conducts seminars, workshops and short training courses in the field of writing, publishing and library services in India.

National Council of Educational Research and Training: Established in 1961, the NCERT acts as the principal agency for academic advice to the Ministry of Human Resource Development, in matters pertaining to the formulation and implementation of policies and programmes for the qualitative improvement of school education. It is mainly engaged in research, development, training and extension and has provided support to the implementation of 10+2+3 pattern of education. Besides developing curricula for the various stages of school education, it also produces text books in almost all the subjects for the entire school stage (classes I to XII).

National Development Council: The National Development Council was set up in 1952 with a view to strengthening and mobilising the efforts and resources of the nation in support of the plan, promoting common economic policies in vital spheres and ensuring balanced and rapid development in all parts of the country. The Council consists of the Prime Minister, all Union Cabinet Ministers, Chief Ministers of all States and Union Territories, the Lt.-Governor and the Chief Minister of National Capital Territory of Delhi Administration and the Chairman and Members of the Planning Commission. Other Central and State Ministers can also be invited to participate in the deliberations of the Council. The Secretary of the Planning Commission acts as the Secretary of the National Development Council (NDC) and the Planning Commission provides to the NDC such administrative and other support as is necessary.

The NDC prescribes the guidelines for the formulation of the national plan, makes an assessment of the resources required for the

plan, considers the plan as formulated by the Planning Commission and reviews the working of the plan from time to time and recommends such measures as are necessary to achieve the aims and targets set out in the national plan. It also considers the important questions of social and economic policy affecting national development and suggests ways and means of securing active participation and cooperation of the people. In addition to these, the NDC considers the question of total Central assistance to be given to the States for their programmes of planned economic development.

National Film Festival: Instituted in 1953, it aims at promoting India's film art by acknowledging outstanding achievements in 28 categories of film art and film making. This includes an award on the best book on cinema instituted in 1982 for the first time. The golden lotus (Swaran Kamal), the silver lotus (Rajat Kamal) and cash prizes are given under the national awards scheme. The scheme consists of all-India and regional awards. Besides, the Dadasaheb Phalke Award, instituted in 1969, is given for the outstanding contribution to the cause of Indian cinema.

National Informatics Centre: It catalyses computer usage in decision making mechanism in various ministries and departments of Central Government. There are 15 specialised divisions/groups in NIC providing service to the user organisations in building up information systems.

National Sample Survey Organisation: It was set up in 1950 with a programme of conducting large-scale surveys to provide data for estimation of national income and related aggregates especially relating to unorganised sector of the economy and planning and policy formulation. Today, it is a major fact finding body and occupies a unique position in the nation's statistical system. It obtains comprehensive and continuing information relating to social, economic, demographic, industrial and agricultural statistics through sample surveys on a countrywide basis. Its activities are governed by a Governing Council. Five zonal training centres have been set up for imparting training to the technical staff of the field operation divisions.

As a major fact-finding body, the organisation occupies a unique position in the nation's statistical system. Over the years, it has enlarged and diversified the data base, specially in areas which are vital for development planning.

National School of Drama: Set up in 1959, it imparts training in dramatic arts leading to 3-year

diploma. The training covers all aspects of theatre which *inter alia* includes acting, direction, production, of drama and also promoting research survey in classical, traditional and modern drama.

With headquarters in New Delhi, the School is fully financed by the Government of India.

Press Council of India: It safeguards freedom of press and maintains and improves the standard of newspapers and news agencies in India. The Council has the power to consider complaints *suo moto*, in addition to inquiry into complaints brought before it. It has also been empowered to make observations against any authority including Government if it considers it necessary for the performance of its functions.

Press Information Bureau: It is the central agency of the Government of India for informing the people about its policies and programmes. The information put out by the Bureau on behalf of the Government goes to dailies as well as periodicals, news agencies and radio and television organisations, both Indian and foreign. It arranges publicity for the Government policies, programmes and activities, feed-back on how these policies and activities are received and lastly to advise the Government on its information policy.

Reserve Bank of India: Established in 1935, the Reserve Bank of India is the Central Bank of India. Its main function is to regulate the issue of bank notes and keep reserves for securing monetary stability. The bank is the sole authority for the issue of currency in India other than one rupee coins/notes and subsidiary coins. It acts as banker to the Government of India, State Governments, commercial banks and to some of the financial institutions including State cooperative banks.

The Reserve Bank was originally constituted as a shareholders' institution. The entire share capital owned by private shareholders was acquired by the Central Government against compensation and from January 1949 it became a State-owned institution.

Zoological Survey of India: It carries out studies in diverse fields of animal taxonomy and investigations related to agriculture, forestry, fisheries and public health and hygiene. Particular emphasis is given to studies on ecological aspects. Faunistic surveys are conducted in important ecosystems which include 54 estuarine and coastal areas, mangroves, hilly tracts of Western Ghats and selected high altitude areas in the Himalayan region.

25. Panchayati Raj

Panchayati Raj is a system of local self-government administered by a council or 'Panchayat' duly elected in a democratic manner. The institution of panchayati raj is specifically designed for rural population to take care of the problems of rural areas. It provides the administrative apparatus for implementation of the programmes of rural development.

The Panchayati Raj system is best suited for developmental and administrative need of India's rural masses because of wide variation in the nature and magnitude of local problems. It is an inexpensive form of local government which can identify the local problems and issues more realistically and expeditiously act to resolve them judiciously. The panchayats provide a forum where local people can meet and chalk out programmes of their own progress. Thus existence of panchayati raj enables the country to have more meaningful developmental plans in which mass participation of the rural population can be assured.

Objectives: The basic objective of Panchayati Raj is to evolve a system of democratic decentralisation and devolution of powers, functions and authority to the rural people with a view to ensuring rapid socio-economic progress and speedier and inexpensive justice. This is to be achieved through (i) increasing agricultural production, (ii) development of rural industries, (iii) fuller utilisation of available manpower and natural resources, (iv) fostering co-operation among the rural masses, (v) amelioration of the conditions of the weaker sections of the rural community, (vi) progressive decentralisation of authority and encouragement of voluntary agencies.

Basic Structure: The Panchayati Raj system has a three-tier structure, viz., (i) the Village Panchayats, (ii) the Panchayat Samitis and (iii) the Zila Parishad. While most of the States have adopted this three-tier structure, in some of the States and Union Territories there is only a two-tier system and in some cases, only a one-tier system prevails.

(i) The Village Panchayat or Gram Panchayat: The village panchayat or the gram Panchayat functions at the village level. There is a panchayat for each village or a group of villages in case the population of these villages happens to be too small. Members to the village panchayat are elected through voting in a general assembly of the village known as Gram Sabha. All adult

members of the village elect the council called village panchayat or gram panchayat and they hold the office normally for a three-year term. They also elect their Chairman known as village Pradhan. The village panchayat has a secretary and a village level worker (Gram Sevak) to assist it in its functioning. The panchayat formulates the programme for agricultural production and makes arrangement for the cooperative management of village land. It also seeks to ensure a minimum standard of cultivation for raising agricultural production.

(ii) Panchayat Samiti: The panchayat samiti is the main executive body which operates at the block level. All the elected Chairmen (Village Pradhans) of the village panchayats composing that block are the members of the panchayat samiti. President and vice-president of the panchayat samiti are elected from among the members for a three-year term. The main functions of the panchayat samiti are to prepare, execute and coordinate the programmes of development at the block level. The samiti is charged with the responsibility of preparing and implementing plans for the development of agriculture, animal husbandry, fisheries, cottage and small scale industries, rural health by the block development officer and extension officers.

(iii) Zila Parishad: The Zila Parishad functions at the district level and is responsible for making executing and co-ordinating the programmes of rural development for the entire district. The members of the Zila Parishad are: (i) The presidents of all the panchayat samitis in the district, (ii) the members of the Legislative Assembly (MLAs) from the district and (iii) the member of Parliament (MPs) representing the district. The chairman of the Zila Parishad is elected from among its members. The Zila Parishad is provided assistance and guidance for carrying out its development programmes by the district collector and other district level government officials.

With a view to grant constitutional status to Panchayati Raj institutions in the country and to bring about uniformity, the Parliament passed the Constitution (Seventy-third Amendment) Act, 1992 in December 1992, which came into effect from April 24, 1993. This amendment envisages the establishment of Panchayats as units of local self-government in all States and Union Territories except the States of Nagaland, Meghalaya and

Mizoram and certain other specified areas. The Eleventh Schedule of the Constitution states powers and responsibilities entrusted to these bodies.

The Panchayati Raj system has been established in all the States and Union Territories except Meghalaya, Nagaland, Lakshadweep and Mizoram. A three-tier system is in existence in Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Uttar Pradesh, West Bengal, Arunachal Pradesh and Chandigarh. A three-tier system also exists in Karnataka and Tamil Nadu, but instead of Zila Parishad, they have the District Development Councils which are advisory bodies with no executive powers. Laws have been enacted to set up elected Zila Parishad in Karnataka, Assam, Haryana, Manipur and Orissa. Delhi and Pondicherry have a two-tier system while in the remaining States and Union Territories a one-tier

system is operative.

Under the Constitution (73rd Amendment) Act, 1992 which came into effect on April 24, 1993, States have brought in fresh legislation or amended their existing Panchayati Raj Acts within the stipulated period of one year. The Panchayati Raj institutions are to function as institutions of self-government, endowed with power and authority to formulate and implement schemes for economic development and social justice.

The Act provides for regular elections every five years to be conducted by the State Election Commission. Direct elections are to be held in respect of members at village, block and district levels of panchayats. Reservation has been provided for scheduled castes and scheduled tribes in proportion of their population. Reservation also exists for women for one-third of the seats.

26. Rural Development

India lives in villages and village uplift is the key to the progress of the country. Since Independence, there has been a great exodus of population from the villages to the cities and towns. In spite of this the majority of our population still lives in villages.

According to the 1971 census, 96 per cent of India's geographical area comprised rural India, and 79.8 per cent of her total population lived in rural areas. The 1991 census estimates show that out of total population of 846 million in that year, 629 million persons or 74.35 per cent of total population were living in the villages while only 217 million people (25.65 per cent of total population) lived in cities and other urban areas. Thus, over 74 per cent of the population inhabiting over 95 per cent of the geographical area which makes rural India, cannot be taken lightly in any strategy that the country may adopt for its socio-economic development.

Successive five year plans have deployed huge funds for village development. No doubt, a complete transformation has taken place in the villages, but in actual practice the conditions of our villages have improved only marginally. Statistics show that more than half a million villages in the country have been electrified and over ten million tube-wells have been energised. The Green Revolution has brought about prosperity for the villagers. But a lot more needs to be done. This is in respect of link roads to villages, educational facilities, provision of better and improved health

services and sanitary conditions, piped water to villagers, banking, postal and telephone services etc. It is towards this that the Government has evolved a number of schemes.

SOCIAL WELFARE SCHEMES

Alleviation of rural poverty has been the dominant concern of the Government and with end in this, a new dimension has been added by introducing the fully Central funded National Social Assistance Programme which came into effect on August 15, 1995. This reaffirms that Central Government's resolve to help the poor rural people, particularly the old and destitute and the women.

The social welfare schemes are aimed at ameliorating the condition of poor people. The schemes are: mid-day meal scheme for primary school students for poor families, a rural group life insurance scheme where the Government would provide half the premium, a national social assistance scheme and construction of one million dwelling units. They will cost nearly Rs. 4,000 crore a year.

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when it is extended to the entire country. This also marks the entry of the Centre in a crucial social welfare sector where the States have additionally a larger role to play.

Rural group life insurance scheme : The scheme would cover people below the poverty line. In this unprecedented scheme, every poor man in a village would get a life insurance. Half of the premium amount is to be paid by the State and the rest by the villagers. Families of the insured poor man would get Rs. 5,000 in case of natural death and double this for an unnatural death.

National social assistance scheme : The National Social Assistance Programme introduces several schemes for social assistance to poor households. The three schemes under this programme will ensure a minimum national standard of social security for the poor and reinforce the Central Government's commitment towards the fulfillment of the Directive Principles of State Policy enshrined in Articles 41 and 42 of the Constitution. The National Social Assistance Programme provides for (i) National Old Age Pension Scheme under which Rs. 75 per month would be paid to persons 65 years old and above who are destitute; (ii) National Family Benefit Scheme which will provide lumpsum benefit of Rs. 5,000 in the case of natural death and Rs. 10,000 in the case of death due to accident for households below the poverty line on the death of the primary bread earner. The age group for the benefit is 18-65 years; and (iii) National Maternity Benefit Scheme which provides for a lumpsum assistance of Rs. 300 per pregnancy to women above the age of 19 years belonging to households below the poverty line; only first two births are to be covered.

INDIRA MAHILA YOJNA

A scheme, "Indira Mahila Yojna", for the benefit of poor women was also introduced on August 20, 1995. The programme seeks to organise the schemes for women's development at the anganwadi level in Indira Mahila Kendras where their needs would be identified, prioritised and evolved into micro plans. At the block levels, these micro plans would be combined and then the district plans would be formulated on these basis. The Institutional mechanism would help ensure the participation of women in the decision-making process.

Indira Mahila Yojna is another step towards empowerment of women. It will generate awareness among women, assist income generation and bring

about convergence of government programmes for them. The spectrum of services at the Indira Mahila Kendra are :

- Easier access to credit available for women in government schemes.
- Preparation of sub-plan for women.
- Information sharing.
- Awareness and confidence building.
- Creation of opinion groups.
- Raising of resources.

PRIME MINISTER'S ROZGAR YOJNA

The Prime Minister's Rozgar Yojna was launched on October 2, 1993 with the objective of providing sustained employment to about 10 lakh educated unemployed urban youth in micro enterprises during the Eighth Five-Year Plan. These enterprises cover manufacturing, service and business ventures.

Under the scheme, youth between the age of 18 and 35 belonging to families having income of less than Rs. 25,000 per annum are provided assistance. These educated unemployed entrepreneurs are given a subsidy of 15 per cent subject to a ceiling of Rs. 7,500 each for starting the micro-enterprises. They are required to bring in 5 per cent of the project cost as margin money. Each entrepreneur is eligible for a loan up to a ceiling of Rs. 1 lakh and this loan does not require a collateral guarantee.

A reservation of 22.5 per cent for scheduled castes/scheduled tribes and 27 per cent for other backward classes has been provided. Preference is given to women. The beneficiary has to be a permanent resident of the urban area for three years.

INTEGRATED RURAL DEVELOPMENT PROGRAMME

To ameliorate the conditions of these underprivileged people, many schemes, such as Community Development Projects, Small Farmers Development Agency (SFDA), Marginal Farmers and Agricultural Labour (MFAL), Drought Prone Area Development Programmes (DPAP) were started by the Government. However, it was realised that despite all these programmes, the majority of the rural population continued to remain in the grip of grinding poverty. Thus, with a view to improving the economic and social life of the 'poorest of the poor' living in the rural areas, a new development strategy was designed, which is known as Integrated Rural Development Programme or IRDP. Conceived in March 1976, the IRDP was

initially launched in 1978-79 in 2,300 blocks and was extended to cover all the 5,011 blocks of the country with effect from October 2, 1980.

The main objective of the Integrated Rural Development Programme is to improve the economic and social conditions of the poorest section of rural society. It aims at raising their levels of living and bringing them above the poverty line on a lasting basis by giving them income generating assets, credit facilities and other inputs.

The families eligible for assistance under this programme are those where the annual family income is less than Rs. 11,000 per year. It also includes cultivating families where the size of operational holding is less than 5 acres of land. Among these families, the poorest ones are provided assistance in the initial stages and the remaining ones are covered gradually. The final selection of the poorest families is done at a meeting of the village panchayat gram sabha.

Special attention is being paid to rural women under the IRDP. There is a special component of the programme for organising rural women for productive activities on a group basis. The identified poor rural women are offered training and provided with suitable assets for increasing their family incomes.

TRAINING OF RURAL YOUTH FOR SELF-EMPLOYMENT

A national scheme for Training of Rural Youth for Self-Employment (TRYSEM) was launched by the Central Government on August 15, 1979. The aim of this scheme is to equip the rural youth with necessary skills and technical knowledge with a view to enabling them to seek self-employment. Under this scheme, only those persons in the age group of 18 to 35 years, who belong to the target poverty groups of small and marginal farmers, agricultural labour, rural artisans and others below the poverty line, are eligible for training. TRYSEM, as a part of IRDP, aims at training two lakh rural youth every year at an average rate of 40 youth per block. Besides training, the scheme envisages organisational and operational linkage with other institutions so that credit, marketing, raw material supplies, etc., may be provided to the trainees at the appropriate time.

DISTRIBUTION OF SURPLUS LAND

Land, in rural areas, continues to be regarded an important asset, a significant resource of production and a widely accepted measure of social strength. Thus, for improving the socio-

economic status of the poor landless labourers, who constitute the hard core of rural poverty groups, it is necessary that the surplus land made available through implementing land ceiling laws, be distributed expeditiously among the landless poor. Though land ceiling laws have been enacted and are being implemented in all the States excepting Nagaland, Meghalaya, Arunachal Pradesh and Mizoram where land is generally held by the community, the progress in acquisition and distribution of surplus land is very slow.

DROUGHT PRONE AREAS PROGRAMME (DPAP)

Being Implemented in 947 blocks, spread over 149 districts of 13 States in the country, the DPAP aims at an integrated development of these areas through optimum utilisation of land, water and livestock resources with a view to expanding production, opening up more avenues of employment and increasing incomes of the people inhabiting these areas. The economy of these areas is sought to be insulated from the effects of recurring droughts through diversification of agriculture, and by promoting pasture development, soil management and water conservation.

DESERT DEVELOPMENT PROGRAMME (DDP)

Launched in 1977-78, the Desert Development Programme aims at integrated development of desert areas with a view to providing the local population better incomes and more employment opportunities. The programme now covers 227 blocks in 36 districts in seven States, of which 17 are in hot and arid zones of Rajasthan, Haryana and Gujarat, defined as desert areas in the report on desert development prepared by the National Commission on Agriculture. The DDP also covers the cold arid zones comprising two districts in Jammu and Kashmir, and two districts of Himachal Pradesh. Development of forests and grasslands, dunes stabilisation, ground water development, construction of water harvesting structures, rural electrification for energising pumpsets and development of agriculture, horticulture and animal husbandry are some of the major components of the Desert Development Programme.

NATIONAL RURAL EMPLOYMENT PROGRAMME (NREP)

The NREP aimed at providing additional employment opportunities of 100 man-days per year to the

underemployed rural poor and creating durable community assets for strengthening rural infrastructure. Under the programme, the workers were given one kilogram of foodgrains daily as a part of their wages. This was being done with a view to improving their nutritional standards; the foodgrains being priced since January 1984 at subsidised rates. The NREP was indeed a judicious combination of three basic objectives, viz., creating more employment opportunities, utilising surplus foodgrain stocks and improving nutritional standards of the poor. In April 1989, the NREP was merged with Jawahar Rozgar Yojana.

RURAL LANDLESS EMPLOYMENT GUARANTEE PROGRAMME (RLEGP)

With a view to alleviating poverty, underemployment and underemployment among the rural landless workers, the Rural Landless Employment Guarantee Programme was launched in 1983-84. The programme aimed at (i) improving and expanding employment opportunities for the rural landless and providing guarantee of employment to at least one member of every landless labour household up to 100 days in a year; and (ii) creating durable assets for strengthening of the rural infrastructure for rapid growth of the rural economy. The RLEGP was entirely financed by the Central Government. With effect from April 1989, the RLEGP was also merged with the Jawahar Rozgar Yojana.

REHABILITATION OF BONDED LABOUR

Bonded labour comprises that class of rural workers which has remained attached to the landlords and other village bigwigs for generations together, working for them for a mere pittance, without being ever having a chance to choose or change their masters, thus perpetuating the vestiges of the much maligned and obnoxious slave system of the bygone ages. As such, these people remained tied up to the lowest rungs of the fresh air of freedom or of participating in the process of rural development. Consequently, legislation was passed for abolition of the system of bonded labour and steps were taken to release them from their age-old bondage. The State Governments were made responsible for identifying and rehabilitating the released bonded labourers. In addition to the on-going beneficiary schemes,

a Centrally-sponsored scheme for rehabilitation of freed bonded labour was launched in 1978-79. The scheme provides Central grant of 50 per cent of the total cost on a matching basis, subject to a ceiling of Rs. 2,000 per bonded labourer.

MINIMUM NEEDS PROGRAMME (MNP)

The Minimum Needs Programme is aimed at improving quality of life and providing infrastructure support needed for supporting and supplementing the other beneficiary programmes of helping the rural poor. The MNP is essentially a programme of investment in infrastructure and human resource development. It seeks to improve the consumption levels, productivity and efficiency of the poor through provision of free or subsidised services according to the internationally accepted norms. The main components of the Minimum Needs Programme are: (i) elementary education, (ii) adult education, (iii) rural health, (iv) rural water supply, (v) rural roads, (vi) rural electrification, (vii) housing sites for landless labourers, (viii) environmental improvements of urban slums and (ix) nutrition. Besides these, three more components have been added to the Minimum Needs Programme under the Seventh Five-Year Plan. These are: (i) rural domestic cooking energy, (ii) public distribution and (iii) rural sanitation. But MNP seeks to provide these services through public agencies in a time-bound manner. The integration of the Minimum Needs Programme with other beneficiary programmes like the IRDP, TRYSEM, etc., can have a more enduring impact on the problem of poverty in rural areas.

JAWAHAR ROZGAR YOJANA

An ambitious employment guarantee programme, Jawahar Rozgar Yojana (JRY), which is being implemented through the village panchayats one which seeks to guarantee employment to at least one person in a rural family living below the poverty line was launched in 1989. Under the programme, panchayats with a population ranging between 3,000 and 4,000 are given annual financial assistance of Rs. 80,000 to Rs. 1 lakh.

The yojana envisages provision of employment to at least one member of each poor rural family for 50 to 100 days a year at a workplace near his or her residence. A highlight of the scheme is that 30 per cent of the jobs are reserved for women.

All existing rural wage employment programmes have been merged into the yojana. The programme

aims at covering all 440 lakh families in rural India living below the poverty line.

The JRY also has two sub-schemes, namely, the million wells scheme and the Indira Awas Yojna, which continue under the first stream of JRY.

Certain modifications have been carried out in JRY during the Eighth Five-Year Plan to make the scheme more effective in reaching its benefits to the targeted sections of the population. One of the significant modifications is the steps for

prevention of migration of labour which had been causing a lot of problems.

Under the new scheme, five per cent of the total JRY funds subject to the maximum of Rs. 75 crore are earmarked for taking up special and innovative projects such as those aimed at prevention of migration of labour, enhancing women employment, special programmes through voluntary organisations aimed at drought proofing as well as watersheds development resulting in sustained employment.

27. Five-Year Plans

India embarked upon planned economic development soon after the achievement of independence. Planning in India derives its objectives and social premises from the Directive Principles of State Policy set forth in the Constitution. The Planning Commission prepares a blueprint of development, taking an overall view of the needs and resources of the country.

The First Five-Year Plan (1951-52 to 1955-56) had a two-fold objective to correct the disequilibrium in the economy caused by the Second World War and partition of the country and to initiate simultaneously a process of all-round balanced development which would ensure a rising national income and a steady improvement in the living standards over a period of time. The plan accorded highest priority to agriculture, including irrigation and power projects.

The Second Five-Year Plan (1956-57 to 1960-61) sought to promote a pattern of development which would ultimately lead to the establishment of a socialistic pattern of society in India. In particular, it stressed that the benefits of economic development should accrue more to the relatively less privileged sections of society and there should be a progressive reduction in the concentration of incomes, wealth and economic power. The plan aimed at 25 per cent increase in national income, rapid industrialisation with particular emphasis on the development of basic and heavy industries, large expansion of employment opportunities and reduction of inequalities in income.

The Third Five-Year Plan (1961-62 to 1965-66) aimed at securing a marked advance

towards self-sustaining growth. The objectives of the plan were to secure an increase in the national income; to achieve self-sufficiency in foodgrains and increase in agricultural production; to expand basic industries like steel, chemicals, fuel and power, and to establish machine-building capacity to utilise fully the manpower resources of the country and ensure substantial expansion in employment opportunities and to establish progressively greater equality of opportunity and bring about reduction in disparities of income and wealth.

The finalisation of the fourth plan was delayed due to the situation created by the Indo-Pakistan conflict, two successive years of severe drought, devaluation of the currency, rise in prices and erosion of resources available for plan purposes. However, three annual plans between 1966 and 1968 were formulated.

The Fourth Five-Year Plan (1969-74) aimed at accelerating the tempo of development in conditions of stability and at reducing fluctuations in agricultural production as well as the impact of uncertainties of foreign aid. It aimed at raising the standard of the people through programmes which, at the same time, were designed to promote equality and social justice. The plan laid particular emphasis on improving the conditions of the less privileged and weaker sections of the society.

The Fifth Five-Year Plan (1974-79) was formulated at a time when the economy was facing severe inflationary pressures. The major objectives of the plan were to achieve self-reliance and to adopt measures for raising the consumption standards of the people living below the poverty line. The plan also gave high priority to bringing inflation under control and to achieve stability in the economic situation. The fifth plan was ended

one year ahead with the close of the annual plan 1977-78 and work was initiated for a new plan for the next five years with new priorities and programmes. The new concept of continuous long-term plan called 'rolling programme' was formulated but this had to be given up and the original pattern of five-year plan was restored.

THE SIXTH FIVE-YEAR PLAN (1980-85)

Having terminated the fifth plan a year ahead of its scheduled operation, the Janata Government at the Centre launched the sixth plan in 1978-79. However, this plan was once again disbanded with the new Government taking charge at the Centre and a revised sixth plan was formulated. This revised plan, published in 1981, was effective from the year 1980 onwards and covered a period up to the end of 1985.

The removal of poverty was the foremost objective of the Sixth Five-Year Plan, even though it was recognised that with the given magnitude of the problem, it could not be accomplished in a short span of five years.

The sixth plan envisaged a public sector outlay of Rs. 97,500 crore during 1980-85. Of the public sector outlay of Rs. 97,500 crore, Rs. 12,539 crore were provided for agriculture and allied activities and Rs. 12,160 crore for irrigation and flood control. These two taken together made a total outlay of Rs. 24,699 crore for the agricultural sector of the economy which was a little more than 25 per cent of the total envisaged public sector outlay of the sixth plan.

The public sector outlay over the sixth plan period amounted to Rs. 1,10,821 crore (at current prices) as against the envisaged outlay of 97,500 crore at 1970-80 prices.

The plan, in spite of all odds against it, was a tremendous success. The economy attained a growth rate of 5.3 per cent as against the 5.2 per cent laid down in the plan. Production targets were largely achieved in the fields of foodgrains and oilseed. However, the realised rate of 5.5 per cent growth rate in the industrial sector was much below the plan target of 7 per cent. Success was also striking in the realm of poverty alleviation. In brief, the sixth plan made a fairly convincing success in strengthening the impulses of growth.

The SEVENTH FIVE-YEAR PLAN (1985-90)

The Seventh Five-Year Plan, which came to a close on March 31, 1990, is estimated to have

achieved a GDP growth of 5.6 per cent per annum as against the target growth rate of 5 per cent envisaged under the Plan. Though the GDP growth rate has fluctuated from year to year; being just 5 per cent in 1985-86 and below 4 per cent in 1986-87 and 1987-88, the impressive growth rate of 10.4 per cent recorded in 1988-89 and 5.2 per cent growth in 1989-90 have enabled the plan to exceed its growth rate envisaged for the five year period.

The Seventh Plan envisaged a public sector outlay of Rs. 180,000 crore at 1984-85 prices. The actual expenditure over the first four years of the Plan and the revised outlay for the last year, add up to a total expenditure of Rs. 220,216.3 crore which is over 23 per cent higher than the envisaged outlay. Even after allowing for the price rise over the period, it is evident that the pace of planned expenditure has been, by and large, satisfactory.

The financing pattern of the planned expenditure has been different from the plan projections. The main areas of concern relate to shortfalls in the surpluses of public enterprises, steep rise in centre's non-Plan expenditure and the increasing reliance on deficit financing. Among the items of non-plan expenditure, defence, interest payments on public debt and subsidies on food and fertilisers accounted for nearly one-third to three-fourths of the revenue receipts of the Central Government over those years of the Seventh Plan.

Of the total public sector outlay of Rs. 220,216 crore, 91.4 per cent (Rs. 208,478 crore) were raised through domestic sources while foreign aid contributed Rs. 19,719 crore), i.e., 8.6 per cent of the total public sector outlay. Performance was most disappointing in the case of balance from current revenues which were negative. Deficit financing during the Seventh Plan is estimated to have been of the order of Rs. 34,132 crore as against Rs. 14,000 crore envisaged under the Plan.

The ratio of gross domestic saving as a percentage of the GDP at current market prices improved marginally from 20.4% in 1984-85 to 21.7% in 1989-90 as against the target of 24.5 per cent envisaged under the Plan. There was also only a marginal improvement in the ratio of gross capital formation from 22.8 per cent in 1984-85 to 24.1 per cent in 1989-90 as against the target of 25.9 per cent for the Seventh Plan.

28. Eighth Plan — Objectives

The Seventh Five-Year Plan ended on March 31, 1990. In the normal course the Eighth Plan should have begun on April 1, 1990. However, due to some unavoidable circumstances including the changes in party in power at the Centre, the Plan document could not be finalised. It was only when the Government under P.V. Narasimha Rao assumed office that the Plan was finalised and implemented with effect from April 1, 1992. The duration of the Eighth Plan is thus from April 1, 1992 to March 31, 1997.

Objectives of the Eighth Plan. The Eighth Plan sought to give priority to the following set of six objectives:

- (i) Generation of adequate employment to achieve near full employment level by the turn of the century;
- (ii) Containment of population growth through active people's cooperation and an effective scheme of incentives and disincentives;
- (iii) Universalisation of elementary education and complete eradication of illiteracy among the people of the age group of 15 to 35 years;
- (iv) Provision of safe drinking water and primary health care facilities, including immunisation to the entire population and complete elimination of scavenging;
- (v) Growth and diversification of agriculture to achieve self-sufficiency in food and generate surpluses for exports; and
- (vi) Strengthening the infrastructure (energy, transport, communication, irrigation) in order to support growth process on a sustainable basis.

The Eighth Plan was to concentrate on these objectives keeping in view the need for

(a) continuous reliance on domestic resources for financing investment, (b) increasing the technical capabilities for the development of science and technology, (c) modernisation and competitive efficiency so that the Indian economy could keep pace with and take advantage of the global developments.

Growth Rate. The Eighth Plan aimed at achieving a growth rate of 5.6 per cent per annum in Gross Domestic Product (GDP) over the five-year period 1992-97. This growth target had been set against the backdrop of 5.8 per cent GDP growth rate achieved during the Seventh Plan period 1985-90. In view of this encouraging performance of Seventh Plan, some people advocated for a 6 per cent growth target. But due to resource crunch that the public sector was facing, the growth target was fixed at 5.6 per cent.

Eighth Plan Outlay and Investment. The Eighth Plan envisaged a total outlay of Rs. 7,98,000 crores in both public and private sectors taken together of which public sector outlay was Rs. 4,34,100 crores. This means that the share of public sector in total Plan outlay under the Eighth Plan was 45.2 per cent as against 52.9 per cent in the Sixth and 47.8 per cent in the Seventh Plan. Of the total public sector outlay of Rs. 4,34,100 crores, Rs. 3,61,000 crores was public sector investment and Rs. 73,100 crores current outlay i.e. outlay of recurring and non-investment nature.

The sectoral distribution of public sector outlay is given in the following table. As is evident from the table, the energy sector received the largest share in the outlay followed by the transport

Public Sector Outlay of Major Heads of Development with Eighth Plan 1992-97

(Rs. crore at 1991-92 prices)

Heads of Development	Outlay	Per cent of the total outlay
1. Agriculture and allied activities, irrigation and flood control	54992.50	12.67
2. Rural Development	34425.36	7.93
3. Special Area Programmes	6750.16	1.55
4. Energy	115561.09	26.62
5. Industry and Minerals	46921.75	10.81
6. Transport	55925.57	12.88
7. Communications	25109.88	5.78
8. Science and Technology	4131.71	0.95
9. Ecology and Environment	4909.98	1.13
10. General Economic and General Services	6360.00	1.47
11. Social Services	79011.90	18.20
Grand Total	434100.00	100.00

sector. Taken together, these two sectors accounted for about 40 per cent of the public sector outlay in the Eighth Plan. Share of agriculture had been put at about 12.7 per cent, which combined with about 8 per cent share of rural development claims over one-fifth of the public sector outlay. In fact, the share of outlay for rural development in the Eighth Plan was larger than any other preceding Plan and thus signified the emphasis of rural development and poverty alleviation that the Plan sought to place on it in the context of overall development of the economy. Industry sector was allocated around 11 per cent of the total public sector outlay.

Sectoral Development Profile

Agriculture. The Eighth Plan for agricultural development aimed at generating surplus for exports in foodgrains and attaining self-sufficiency in respect of pulses and oilseeds. The agricultural sector was expected to grow at an average annual rate of a little more than 4 per cent in terms of gross value of output and 3 per cent in terms of value added.

In order to attain the desired growth in agriculture special efforts were made for enhancing the productivity and reducing the instability of production. Since about two-thirds of the area was still unirrigated and largely rainfed, greater stress was laid on dry land farming. Efforts were made to spread the benefits of the Green Revolution to other parts of the country, particularly to the eastern regions which have adequate rainfall and fertile soil. Investment was made in the expansion of irrigation potential and improve efficiency of irrigation system to reduce water wastage.

Industry and Minerals. The output in mining and manufacturing sector during the Eighth Plan period was expected to grow at an annual rate of 8 per cent. The private sector was expected to play an increasing role in industrial activities during

the Eighth Plan. The series of reforms introduced by the Government in the Industrial sector were intended to deregulate or unshackle the industry and enable it to take decisions on its own without the need for government approval. It was then believed that the private sector had come of age and needed independence in decision making to meet the needs of the dynamic market. The role of the public sector, on the other hand, was sought to be limited. The new Industrial Policy of July 1991 brought down the areas reserved for the public sector from 29 to 8 industries and now the public sector would concentrate on basic and core sector alone. The Policy laid great reliance on competitiveness to improve efficiency and hence sought greater share for the private sector.

Employment. The Eighth Plan aimed at reducing unemployment to negligible levels within the next ten years. The labour force was projected to increase by about 35 million during 1992-97 and by another 36 million during 1997-2002. In view of the backlog of unemployed persons numbering around 23 million, the total number of persons requiring employment was estimated at 58 million during 1992-97 and 94 million during 1997-2002. This called for an employment growth rate of 4 per cent per annum over the ten year period, if employment to all was to be provided by the end of the Eighth Plan. The Eighth Plan, therefore, had set a target of 2.6 to 2.8 per cent per annum growth in employment, which, if achieved, would have reduced unemployment to negligible levels by 2002 A.D. The Plan focussed not only on the creation of new jobs but also on augmenting productivity and income in the existing jobs because it was realised that larger and efficient use of available human resources was the most effective way of poverty alleviation, reduction of inequalities and for high pace of economic growth.

29. Ninth Five-Year Plan

The broad objectives of 9th Plan (1997-2002), arising from the Common Minimum Programme (CMP) of U.F. Government and the Chief Ministers' Conference on basic minimum services are :

- (i) priority to agriculture and rural development to generate adequate productive employment and eradication of poverty
- (ii) accelerating growth rate with stable prices
- (iii) ensuring food and nutritional

- security for all especially vulnerable sections of society
- (iv) providing minimum services of safe drinking water, primary health care, universal primary education, shelter etc.
- (v) checking growth of population
- (vi) ensuring environmental sustainability of development process
- (vii) empowerment of women and socially-disadvantaged groups such as SC/ST/OBCs and Minorities
- (viii) promoting and

developing people's participatory institutions like Panchayati Raj Institutions, cooperatives and self-help groups (ix) strengthening efforts to build self-reliance. The Plan envisages a gross tentative investment of Rs. 2190,000 crores—Public sector Rs. 759,000 crores (10% of GDP), Private corporate Rs. 683,000 (8.9%), Household Rs. 748,000 crores (9.7%).

Draft Ninth Plan Document : Meanwhile, the Draft 9th Plan document released on March 1, 1998 by the then Deputy Chairman, Planning Commission, Prof. Dandavate, attempts to strike an ideological balance of vigorously pursuing economic reforms and simultaneously fulfilling the socialistic agenda of a welfare state. The 1500-page document is yet to be approved by the entire Commission. Union Cabinet & National Development Council envisages a 7% growth rate in GDP annually (industry to grow by 9.3% (as against 4.5% at present), exports by 14.5% (10.3%), agriculture 4.5% (-2%), full literacy by 2005 AD, creation of 44.36 crore jobs, reduction of poverty ratio to 18% is total poverty alleviation,

expected to be achieved by the end of 11th Plan] and a zero monetised deficit.

In order to achieve an annual growth rate of 7% in GDP, an investment rate of 28.3% and domestic savings rate of 26.2% has been recommended.

While aiming at zero monetised deficit, the plan would be supported with budgetary resources worth Rs. 374,000 crores. Rs. 33,319 crores through borrowings and net inflow of Rs. 60,018 crores from abroad. The rest would be mobilised by the states through tax revenues as well as borrowings. Simultaneously, the fiscal deficit is sought to be brought down from the projected 5% in 1997-98 to 3.5% of GDP by 2002.

However, it has been conceded that allocations worth another Rs. 70,000 crores were needed to fully meet the basic requirements like safe drinking water, universalisation of primary education, health care and nutritional security.

Priority has been accorded to infrastructure (with an allocation of 40%), followed by energy and social services (25.4%), agriculture (including irrigation and rural development—19.4%) transport (14.2%).

30. National Income

National income is the sum total of money value of all the final goods and services produced in a country during the period of one year. It is an aggregative measure of the value of all the goods and services produced in agriculture, industry, trade and all the other vocations in an economy calculated without any double counting. In other words, it measures the net value added by various sectors of the economy during one year.

Since production generates income to all those who participate in the production process, national income can be defined as the sum total of incomes accruing to factors of production as reward for factor services rendered by the normal residents of a country in the course of one year. National income is also known as, and is identically equal to, net national product at factor cost.

National income estimates are published annually by the Central Statistical Organisation of the Government of India in its publication 'National Accounts Statistics'. The current series of national income estimates records India's national income since 1950-51 onwards. The estimates presented are of two types, viz., (i) those based on current

prices, i.e., the prices prevailing in the year to which the estimates relate and (ii) those based on 1980-81 prices, popularly known as national income at constant prices.

The gross domestic product (GDP) is estimated at Rs. 1,049,191 crore in 1997-98 (at 1993-94 prices), a growth of 5 per cent over the previous year's figure of Rs. 998,978 crore. According to the quick estimates of national income, consumption expenditure, saving and capital formation for 1997-98 (released by the Central Statistical Organisation on February 3, 1999) at current prices the GDP in 1997-98 is estimated at Rs. 1,426,670 crore as against Rs. 1,285,289 crore in 1996-97, showing a rise of 11.0 per cent.

The growth of 5 per cent in GDP during the year was mainly due to high growth in community, social and personal services (13.3%) insurance, real estate and business services (8.4%), manufacturing (6.8%), electricity, gas and water supply (6.6%), transport, storage and communications (6.5%) and trade, hotels and restaurants (5.4%). The agricultural sector, however, registered a marginal negative growth of 1.3%. The per capita income in real terms is

estimated at Rs. 9,377 for 1996-97 as against Rs. 9,660 for 1997-98, registering a rise of 3.0 per cent, while at current prices it is estimated at Rs. 13,193 as against Rs. 12,099 for the previous year (+0.9%).

The national income at 1993-94 prices for 1997-98 is estimated at Rs. 926,420 crore as against Rs. 884,237 crore in 1996-97, showing a rise of 4.8 per cent.

At current prices, the national income in 1997-98 (Rs. 1,265,167 crore) increased by 10.9% compared to 1996-97 (Rs. 1,140,895 crore).

The per capita expenditure (at current prices) increased to Rs. 10,015 for 1997-98 from Rs. 9,398 in the previous year indicating an increase of 0.9 per cent; while at constant (1993-94) prices, it recorded an increase of 2.2% from Rs. 7,330 in 1996-97 to Rs. 7,490 in 1997-98.

The gross domestic savings at current prices in 1997-98 amounted to Rs. 361,518 crore as against Rs. 344,391 crore in the previous year, constituting 23.1 per cent of GDP at market prices as against 24.4 per cent in the previous year. The absolute rise has been contributed by the household sector.

The gross capital formation at current prices increased from Rs. 361,687 crore in 1996-97 to Rs. 387,377 crore in 1997-98 (+7.1%) and at constant (1993-94) prices, to Rs. 294,108 crore in 1997-98 from Rs. 285,508 crore in 1996-97 (+3.0%).

Meanwhile, according to the Advance Estimates of National Income for 1998-99, (released by CSO on February 9, 1999) GDP at constant (1993-94) prices in 1998-99 is likely to attain a level of Rs. 1,109,984 crore as against the Quick Estimates of GDP for 1997-98 of Rs. 1,049,191 crore showing an estimated growth of 5.8% as compared to 5% in 1997-98 (Quick Estimates). The growth rate in 1998-99 is mainly attributable to high growth

in agriculture, forestry & fishing (5.3%), manufacturing (5.7%), electricity, gas and water supply (6.3%), trade, hotels, transport and communications (6.8%), financing insurance, real estate, business services, etc. (7.7%), community, social & personal services (5.8%). However mining

& quarrying and construction recorded a very low growth of 0.1% and 2.3%.

National income at constant (1993-94) prices is likely to be Rs. 979,573 crore during 1998-99 as against Rs. 926,420 crore in 1997-98 (Quick Estimates) recording an increase of 5.7%, while the per capita income in real terms (1993-94 prices) is likely to reach a level of Rs. 10,047 as compared to 9660 (1997-98 Quick Estimates) registering a growth rate of 4% as against 3% in the previous year.

Meanwhile, primarily due to a record foodgrain production of 203 million tonnes as against an initial estimate of 195 million tonnes, the CSO has revised 1998-99 GDP growth rate to 6.0% from 5.8%. The revised estimated percentage growth for 1998-99 as released on June 30, 1999 are :

	1997-98	1998-99
1. GDP	5.0	6.0
2. Agriculture Forestry & Fishing	1.0	7.6
3. Manufacturing	6.8	5.2
4. Trade Hotels, etc.	5.7	6.7
5. Financing, Insurance, etc.	8.4	6.2
6. Community Social & Personal Services	13.3	5.4
7. Per Capita Income	3.0	4.2

Estimate for the first Quarter of 1999-2000 : GDP is estimated at Rs. 2,74,066 crore at constant (1993-94) prices as against Rs. 2,59,759 crore in the corresponding period of 1998-99 showing a growth rate of 5.5% which is due to significant growth in manufacturing as also trade, hotels, transport and communications (6.2% each), electricity, gas and water supply (5.2%), construction (6.7%) financing, insurance, real estate and business services as well as community, social and personal services (7.8% each). The growth rate in agriculture forestry and fishing is estimated at 2.8% with mining and quarrying registering a negative growth (2%).

At current prices, the GDP is projected to rise to Rs. 411,835 crore as against Rs. 371,549 crore showing a growth of 10.8%.

31. Poverty in India

Dimensions of Poverty: Poverty is a socio-economic phenomenon which defies any precise definition; its concept and content varies from country to country depending upon what a particular society accepts a reasonably good living standard for its people. Thus, in California, U.S.A., it would not be surprising if a family owning less than two

cars may be dubbed as poor. But in India, poverty manifests itself in its starkest form as a visual of semi-starved, ill clad, deprived millions of countrymen, thousands of them dying every day from malnutrition, ill-health and lack of basic amenities; a picture which is both appalling and agonising from any standards of human existence.

Poverty line is drawn on the basis of a barest minimum desirable nutritional standards of calorie intake. Even when defined in these modest terms, nearly half of India's population is estimated to be deprived of this basic minimum. People below the poverty line comprise largely those whose consumption is very low and who have little physical resources of production. Quite often they are located in the climatically unfavourable regions with extremely low and fluctuating levels of production, income, and meagre avenues of gainful employment.

The Sixth Five-Year Plan (1980-85) indicated that 50.7 per cent of the rural population and about 40 per cent of the urban population was living below the poverty line in 1979-80. The poverty line was drawn on the basis of a per capita daily calorie intake of 2,400 for rural and 2,100 in urban areas. At 1978-79 prices the poverty line was shown at per capita monthly expenditure of Rs. 76 for rural and Rs. 88 for urban areas. On this basis, it was found out that the absolute number of the poor was 317 million, of which 260 million were residing in rural areas and 57 million in urban areas. Subsequently, because of the revision in the population estimates based on 1981 census, the figure of population below the poverty line in 1970-80 were revised and worked out to 339 million persons which accounted for 51.1 per cent of the total population.

The poverty line was later revised upwards in terms of monetary expenditure taking into note the rising cost of living, but the basis of poverty remained the same viz., calorie intake of 2,400 for rural and 2,100 for urban areas. Thus, in 1984-85 the poverty line was drawn at per capita monthly expenditure of Rs. 107 for rural and Rs. 122 for the urban areas. With an average household comprising five persons, rural households with annual consumption expenditure of less than Rs. 6,420 and urban households below annual expenditure of Rs. 7,320 were deemed to be poor. On this basis 39.9 per cent of the rural population and 27.7 per cent of urban population was estimated to be below the poverty line, the proportion of total population below the poverty line in 1984-85 was 36.9 per cent.

Percentage of population living below the poverty line

	Rural	Urban	Total
1972-73	54.1	41.2	51.5
1977-78	51.2	38.2	48.3
1983-84	40.4	28.1	37.4
1984-85	39.9	27.7	36.9
1987-88	33.4	20.1	29.9

The impact of poverty alleviation measures adopted during the Plans has been fairly good. The percentage of people living below the poverty line, which had gone down from 51.49 per cent in 1973-74 to 48.3 per cent in 1977-78, further declined to 36.9 per cent in 1984-85.

The Seventh Plan envisaged to bring the poverty ratio down to 25.8 per cent by the year 1989-90. In absolute terms, the number of poor was expected to decline from (272.7 million persons in 1984-85 to 210.8 million persons in 1989-90. The Planning Commission constituted an expert group in September 1989 to estimate poverty ratio with some changes in methodology adopted earlier by the Task Force. The Group submitted its report in July 1993. According to these new estimates, overall poverty ratio was high at 39.3 per cent in 1987-88. The urban areas had a higher poverty ratio (40.1%) than the rural areas (39.1%).

In a new formula adopted by the Planning Commission on March 10, 1997, the number of those recognised as poor, has doubled overnight from 160 million to 320 million people. The revised estimate is for the year 1993-94.

By the new method, 35.97 per cent of the country's population falls below the poverty line, while the earlier estimate was 18.1 per cent. This new methodology of calculation was largely formulated by Mr. D.T. Lakdawala.

The new method fixed the urban poverty line on the basis of the "consumer price index for industrial workers". Earlier the consumer price index of "urban non-manual employees" was also taken into consideration, which was later on rejected by the Planning Commission. This is the main reason for the rise in the number of people below the poverty line in states like Bihar.

RURAL POVERTY: ORG ESTIMATES

Sixty-one per cent of households in rural India are below the poverty line against the national average of a little over 50 per cent.

If the inflation of the last three years since the revision in the "official cut-off level" of poverty is taken into account, half of the households in the country fall in the below-poverty category, according to the latest study of the Operation Research Group, Delhi.

The cut-off point of Rs. 6,500 annual household income fixed in 1986-87 amounts to Rs. 9,000 now and this is less than the monthly family income of Rs. 750. Even if inflation is not taken into account, about 40 per cent of households are below the poverty level, the study says.

The demographic survey by the ORG, an independent research group, says that two-thirds of households in villages with population below 1,000 have a monthly income less than Rs. 750 as against 16.1 per cent in the case of cities with population over 10 lakhs.

In fact, 27.5 per cent of households in rural India in 1990 continue to be the poorest of the poor with a monthly income of less than Rs. 350. While only 3.4 per cent of households in rural India have a monthly income exceeding Rs. 2,500, the corresponding figure in the case of urban areas is 17.1 per cent. Only six per cent of households in rural India have a monthly income of over Rs. 4,000, the study says.

The situation is the worst in the east zone comprising Bihar, West Bengal, Orissa and Assam where the percentage of households falling below the poverty line is much higher than 50 per cent. As many as 63 per cent of rural households in the east have a monthly income lower than Rs. 750.

Consistent with the objective of successive plans in the realm of poverty alleviation, a number of general as well as specific programmes were implemented for improving the living conditions of the poor. However, in spite of these efforts, the problem of poverty continued to elude any solution. The Sixth Plan, therefore, apart from relying on the overall higher rate of growth of the economy, sought to alleviate poverty through some specific measures. A new scheme, the Integrated Rural Development Programme (IRDP) was incorporated in the Sixth Five-Year Plan for alleviating poverty and deprivation among the rural masses. The main objective of the IRDP is to raise the level of living of the poorest families in the rural areas above the poverty line on a lasting basis by giving them income generating assets and access to credit and other inputs. It is aimed at evolving,

on the one hand; an operationally integrated strategy at increasing productivity and production in agriculture and other sectors, and on the other improving resource position and income level of vulnerable sections of population. The programme now covers all the 5,011 blocks in the country.

With a view to providing technical skills to rural youths to enable them to take up self-employment in agriculture, rural industries, services and business activities in the rural areas, the scheme of Training Rural Youth for Self-Employment (TRYSEM) was also started in August 1979.

Another scheme aimed at poverty alleviation in rural areas, viz., National Rural Employment Programme (NREP) was launched in October 1980. Under this scheme, besides generating employment opportunities, subsidised wheat and rice is provided to the workers.

Another scheme, viz., Rural Landless Employment Guarantee Programme (RLEGP) was introduced in August 1983 with a view to providing guarantee of employment to at least one member of every landless household upto 100 days in an year and for creating durable assets for strengthening the infrastructure to meet the growing requirements of the rural economy. Both the NREP and RLEG were merged into Jawahar Rozgar Yojana in 1989.

Besides these, the Minimum Needs Programme started during the Fifth Plan was continued and strengthened during the Sixth Plan. Special Area Programmes were also expanded to make a significant dent on rural poverty.

The BJP-led NDA Government is all set to eradicate rural poverty with an ambitious programme for rural development including supply of drinking water and road and telephone linkage for every village apart from housing for the rural poor (13 lakh).

32. Agriculture

Agriculture is the backbone of India's economy; it provides direct employment to about 65 per cent of working people in the country, contributes about 29 per cent of gross domestic product and constitutes about a sizeable share in India's exports. It forms the basis of many premier industries of India including the cotton textile, jute and sugar industries. Being the largest source of employment and income to millions of people, it provides a vast market for our industrial products. It is because of this paramount significance of agriculture in India's economy that this sector has

been, and continues to be, accorded a pride of place in India's plans for economic development.

MAJOR CROPS

Agricultural crops can be broadly divided into two categories, viz., food crops and non-food crops. Foodgrains consist of cereals and pulses. Among the cereals are included rice, wheat, jowar, bajra, maize, etc. Pulses include gram, moong, masur, arhar, etc. The non-food crops comprise a number of cash crops such as sugarcane, cotton, jute, tobacco, etc. Tea, coffee and rubber

Agricultural Production

	1990-91	1994-95	1995-96	1996-97	1997-98	1998-99
A. Foodgrains						(Est.)
(m. tonnes)						
(i) Rice	74.29	81.81	76.98	81.73	82.30	82.23
(ii) Wheat	55.14	65.77	62.10	69.35	65.90	69.13
(iii) Coarse cereals	32.70	29.88	29.03	34.11	31.16	29.11
(iv) Total cereals	162.13	177.46	168.11	185.19	179.36	180.87
(v) Total pulses	14.26	14.04	12.31	14.25	13.07	14.78
(vi) Total foodgrains	176.39	191.50	180.42	199.49	192.43	195.25
B. Non-Food						
(a) Sugar cane	241.05	275.54	281.10	277.56	276.25	290.00
(m. tonnes)						
(b) Oilseeds	186.10	213.40	221.00	243.80	220.20	242.20
(lakh tonnes)						
(c) Cotton	98.40	118.90	128.60	142.30	111.40	140.10
*(lakh bales)						
(d) Jute & Mesta	92.30	90.80	88.00	111.30	111.20	92.80
** (lakh bales)						
(e) Potato (Lakh tonnes)	152.10	174.00	188.40	242.20	176.50	235.60
(f) Onion (lakh tonnes)	32.30	40.40	40.80	41.80	31.40	47.50

* 1 bale = 170 kgs. ** 1 bale = 180 kgs.

However, according to latest estimate (July 1999), the total food grain production would be 203 million tonnes (wheat : 73.5 m. tonnes; rice : 84.5 mt; oilseeds : 25.4 mt. and pulses : 15.3 mt.).

are included among the plantation crops. Besides these, we have the horticulture crops like fruits, vegetables, coconut, cashew, etc.

In India, food crops are grown on nearly 73 per cent of the gross sown area. Foodgrain production, which was only about 55 million tonnes in 1950-51, increased to 151 million tonnes in 1983-84. However, during 1984-85, which was the terminal year of the sixth plan, production of foodgrains declined to 145.5 million tonnes. During 1985-86, it recovered to 150.4 million tonnes. However, due to failure of monsoons in some part of the country, food production fell to 143.4 million tonnes in 1986-87. The year 1987-88 saw the worst ever drought of the post-Independence period and consequently food production further declined to 140.4 million tonnes. The spell of an extremely good monsoon during 1988-89 again led to a rise in food production which amounted to 169.9 million tonnes in that year. The improvement continued in 1989-90 as well when the foodgrain production touched 171.0 million tonnes. The year 1990-91 also saw an improvement, with the foodgrain production rising to 176.4 million tonnes. During 1991-92, it recorded a fall of 4.3 per cent to 168.4 million tonnes but showed an upward trend in 1992-93 and reached the level of 179.5 million tonnes. And in 1993-94, it was 184.3 million tonnes. Foodgrains production of 191.1 million in

1994-95 was a record in the country's history, wheat (65.5 m tonnes)—9.5 per cent higher than that in 1993-94. Rice production of 81.1 million tonnes in 1994-95 was also a new record. Thereafter, due to delayed onset of monsoons in Kharif 1995 and unfavourable weather conditions at grain filling stage of rabi crop, food grains production declined substantially in 1995-96 to 185.0 million tonnes. The most unexpected development was a short fall in wheat harvest by 3 million tonnes over the preceding year, forcing the government to release large quantity from its stocks as also importing two million tonnes in order to arrest the rising prices of wheat in the market. In 1996-97, food grains production was likely to increase to 191 million tonnes against a target of 193.5 million tonnes despite the untimely heavy rains and hailstorms in March 1998. In 1998-99, India achieved a record foodgrain production of 203 million tonnes.

FOOD SECURITY

Since the Green Revolution in 1967-68, foodgrain production has been growing steadily, with the country having a comfortable food security with stocks touching a high record of 35.6 million tonnes, as in July 1995.

However, this comfortable position became somewhat difficult in the latter part of 1996-97,

especially for wheat, with wheat stocks falling short of minimum norm in Oct. 1996 (10.4 m.t./10.6 m.t.) forcing the government to import upto 2 million tonnes of wheat as also permitting roller flour mills to import wheat under OGL. In Jan. 1997 too there was no perceptible improvement (6.9 m.t./7.7 m.t.). The government therefore finalised a deal to import 1.5 million tonnes of Australian wheat to meet any exigency. However, the status of rice stock in the Central Pool continued to be comfortable (12.9 m.t./7.7 m.t.) leading to an over-all somewhat satisfactory foodgrains position on 1st Jan. 1997 (19.8 m.t./15.4 m.t.). The situation on food front was quite comfortable on 1st January 1998 (Actual stock of 18.2 million tonnes against the normal requirement of 15.4 million tonnes) and 1st January 1999 (24.4 m.t./16.8 m.t.).

AGRICULTURE IN THE PLANS

The place assigned to agriculture in the Five-Year Plans can be best judged from allocations

to this sector in each Plan. How much importance an economy attaches to a particular sector is reflected in the scheme of its expenditure and the amount of money allocated to the sector. Judged by the criterion, agriculture has been occupying a very important place in India's Five-Year Plans.

The outlay on agriculture has been rising steeply during the successive Plans. From Rs. 601 crore in the First Five-Year Plan, it rose to Rs. 950 crore in the Second, Rs. 1,754 crore in the Third, Rs. 3,674 crore in the Fourth, Rs. 10,541 crore in the Fifth, Rs. 26,130 crore in the Sixth and Rs. 36,586 crore in the Seventh Plan. Under the Eighth Plan, the outlay earmarked for Agriculture and allied activities, irrigation, rural development and special area programmes was Rs. 96,168 crore which was 22.1% of total public sector outlay. During the Ninth Plan, Agriculture and Rural Development have been accorded quite high priority with a share of 19.4% in the overall allocations.

33. Green Revolution

The 'Green Revolution' is the term used for describing the manifold increase in India's farm production and productivity, particularly in the case of the major cereal crops, consequent to the adoption of the 'New Agricultural Strategy' since the late-sixties. The new strategy comprises:

(i) application of a package of inputs consisting of high yielding varieties of seeds, fertilisers and improved agricultural practices in areas of assured water supply;

(ii) introduction of short-term high yielding varieties of major cereals, thus enabling the farmers to grow two or more crops in a year where previously only one crop was grown;

(iii) providing timely credit facilities to the farmers, thus enabling them to purchase the required inputs well in time for the crop season; and

(iv) announcing minimum support prices in advance of the sowing season so as to assure the farmers of reasonable prices for their produce, thus eliminating wide fluctuations in their incomes consequent to unforeseen slump in market prices.

The new agricultural strategy has revolutionised the Indian agriculture. It has pushed into background the era of chronic and continuing

food strategies. It has also provided the much needed incentive to the farmers to develop their agriculture. It has provided a breakthrough in India's long closed circle of rural poverty and spear-headed an agricultural take-off that would provide the missing momentum to rural resources for agricultural development and rapid industrialisation.

The successful adoption of various components of the new agricultural strategy over a wider area depends upon factors like irrigation, farm size, institutional credit, extension services, etc. Areas with better endowment of such factors are among the first to adopt modern inputs and, thus reap the benefits of Green Revolution. But the areas which are deficient in these facilities, and where human factor is not prone to adoption of the new innovations, have lagged behind. Similarly, within the areas where this new strategy has been widely applied, the rich and well-to-do farmers with their large land and capital resources, have gained more than those who are not that better off. Thus, the new agricultural strategy, which certainly has increased production and productivity has led to further regional imbalances as well as inequalities of income within the regions where it has worked well.

34. Industry

The industrial development of India over the last three decades of planned progress is indeed spectacular. The new era of industrialisation in India started with the launching of the Second Five-Year plan in 1956, and ever since then there has been no looking back. It would be no exaggeration to say that the country has achieved in a short span of less than thirty years, such a rapid progress in industrialisation and diversification of industrial structure which is truly revolutionary when compared to the preceding century of slow, uneven and haphazard growth. The general index of industrial production with the base (1980-81=100) which recorded a mere 0.6% increase in 1991-92 to 213.9 from the preceding year 1990-91 (212.6) rose by 2.3% in 1992-93, 5% in 1993-94, 9.4% in 1994-95 and by 11.7% in 1995-96 which was the highest growth rate in the past 25 years. In 1996-97, industrial production slowed down to 7.3% due to a number of factors including constraints in the infrastructure sector, terms of credit availability, lower demand for exports, decline in the crude oil and hydel power generation while political uncertainty resulting in the fall of 2 successive U.F. Governments at the Centre as also other factors in 1996-97, led to a woefully low industrial growth of 4.6% in 1997-98 (April-Feb.).

Nevertheless, the country is now, more or less, self-sufficient in the production of consumer goods and some basic items like iron and steel. Power generation has been substantially stepped up and infrastructure adequately built up for future industrial progress.

Among India's major large scale industries are: cotton textile industry with over a thousand textile mills providing employment to over 15 lakh persons; iron and steel industry with six integrated steel plants and over 216 mini-steel plants; jute industry, sugar industry, cement industry etc. The small scale industrial sector comprising khadi and village industries and small scale industries is a major source of employment and a substantial earner of foreign exchange for the country.

MAJOR INDUSTRIES OF INDIA

Aluminium: The location of this industry (smelting of aluminium) is closely related to the availability of raw material or means of transport and cheap electricity. Smelting units are in Belgaum, Hirahol, Alwaye, Alupuram, Renukoot, Mettur, Jaykregar, Koraput, Korba and Ratnagiri.

Automobiles: Cars are manufactured at Mumbai (Fiat), Calcutta (Ambassador), and Gurgaon (Maruti). Buses and trucks are manufactured at Chennai and Mumbai; Jeeps and four and three-wheeler tempos and small trucks are manufactured at Mumbai, Pune and Gurgaon. Two wheelers (scooters and motor-cycles) are manufactured at Pune, Mumbai, Faridabad, Chennai, Mysore, Ludhiana and Tirupati.

Cement: The leading producers of cement are Tamil Nadu, Madhya Pradesh, Bihar, Gujarat, Karnataka, Andhra Pradesh and Rajasthan.

Cycles: The chief centres of bicycle production are Mumbai, Asansol, Sonapat, Delhi, Coimbatore, Jalandhar and Ludhiana.

Copper smelting: The Maubhandar unit of the Indian Copper Corporation Ltd was the first copper smelting unit in India. The second is in Jamnagar, Rajasthan, one of the largest of its type in the world. Hindustan Copper Limited has implemented the Malankhand Copper Project in Rajasthan in Kerala.

Cotton textiles: This is the most important industry in India in terms of employment and production of export goods. Andhra Pradesh and Gujarat are the chief cotton textile producing states in this field. Maharashtra, Karnataka and Andhra Pradesh have the largest number of cotton textile mills.

Fertilizers: The major centres of fertilizer production are Nangal, Trombay, Gorakhpur, Coimbatore, Cochin, Rourkela, Neyveli, Visakhapatnam, Kota and Uttar Pradesh. Gujarat is the lead in the production of urea.

Glass: Uttar Pradesh, Bengal lead the glass industry.

Heavy electricals: The major heavy electrical plants are in Tiruchirappalli and

Heavy machinery: The major heavy machinery engineering units are at Ranchi, Visakhapatnam, and

Iron and steel: The major iron and steel plants are known in form of districts. The major suppliers are known, form of district supply.

Bokaro plants were established with Soviet collaboration, the Durgapur plant with British Collaboration and the Rourkela plant with German collaboration. A new shore-based plant has been established at Visakhapatnam.

Jute: India manufactures the largest quantity of jute goods in the world. This industry is located mainly in West Bengal, followed by Andhra Pradesh, Bihar, Uttar Pradesh, and Madhya Pradesh.

Leather goods: The chief centres of production of leather goods are Agra, Kanpur, Mumbai, Calcutta and Delhi.

Machine tools: The most important company in this field is Hindustan Machine Tools Ltd with plants at Bangalore, Pinjore, Kalamassery, Hyderabad and Srinagar.

Paper and paper board: This is a forest based industry. The first modern paper mill of the country was set up in 1832 at Serampore in West Bengal. A raw material-based industry, most of the paper production units are in West Bengal, Andhra Pradesh, Orissa, Maharashtra, Karnataka, Madhya Pradesh and Bihar.

Pesticides: Pesticides are produced by a number of units. The important ones are the Hindustan Insecticides Ltd units at Delhi and Alwaye.

Pharmaceuticals: This is one of the oldest industries in India. Antibiotics are produced at Pimpri and Rishikesh. The Hindustan Antibiotics plant at Rishikesh is one of the largest in the

world. Another important plant producing the pharmaceuticals is the Indian Drugs and Pharmaceuticals Ltd (IDPL) unit at Hyderabad. A number of other units are concentrated in Mumbai, Baroda, Chennai, Delhi, Calcutta and Kanpur.

Railway equipment: Railway engines are made at Chittaranjan, Varanasi, Jamshedpur and Bhopal (electric engines). Railway coaches are made at the Integral Coach Factory at Perambur, Tamil Nadu and at Kapurthala in Punjab.

Shipbuilding: The largest shipbuilding unit is Hindustan Shipyard at Visakhapatnam, followed by the Cochin Shipyard, Mazagaon Dock at Mumbai is a smaller unit.

Silk textiles: Karnataka leads in silk textiles, followed by Assam, West Bengal, Bihar, Madhya Pradesh and Jammu & Kashmir.

Sugar: The leading sugarcane-producer states are also the leading sugar producers. They are Uttar Pradesh, Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka and Bihar. There are more than 250 sugar mills in India, with the largest number located in Uttar Pradesh followed by Maharashtra.

Tractors: Tractors are manufactured at Faridabad, Pinjore, Delhi, Mumbai and Chennai.

Woolen textiles: Important producing states are Punjab, Maharashtra and Uttar Pradesh followed by Gujarat, Karnataka and Jammu & Kashmir.

The New Industrial Policy announced by the Government on July 24, 1991, seeks to drastically liberalise the economy and the industry by doing away with industrial licensing, except for 18 specialised cases (which has been further reduced to 15), removing virtually all restrictions on MRTP companies, increasing the limit of foreign equity participation in industries from 40 per cent to 51 per cent in many high priority areas, removing all registration formalities and re-defining the role of the public sector. The underlying objective behind all these changes is to unshackle the Indian economy from the cobweb of unnecessary bureaucratic controls.

According to the new policy, the role of the government should change from that of only

exercising control over the entrepreneurs to providing help by making procedures transparent and by eliminating delays. With regard to the public sector the policy promises to strengthen its role in areas essential for the economy, but wans of review in industries which are unproductive and inefficient. The policy says in 50's and 60's the public sector undertakings were used to control the commanding heights of the economy; now fiscal and monetary instruments will be used. Even in areas still reserved for the public sector, the private sector may also be invited. The areas retained for public sector include arms and ammunition, atomic energy, mineral oils, rail transport, mining of coal, minerals etc. Significant deletions from the earlier reserved

list are steel, aircraft, telecommunications, power transmission and distribution, shipbuilding etc.

The Industrial policy of July 1991 has opened a new chapter in India's economic history. The earlier reforms only tinkered with the licence permit raj but left it intact in all its essential aspects. The new policy explicitly admits that the licence-permit raj has hampered instead of helping our development and, therefore, needs to be scrapped.

The policy also admits that the Government's interferences through MRTP Act had a deleterious effect on industrial growth. The new policy, though it still retains some licensing regulations and controls to serve the social end, does away with much of the licences, permits, regulations and seeks to be more 'market friendly' with a view to making the government and the business as partners and not adversaries in the growth of national enterprise.

36. Energy

COAL

Coal is among the most important traditional sources of energy supply in India. In spite of much development in the alternative sources of energy, viz., electric power and petroleum, coal still holds the position of major energy source in industrial economy of India. India has vast reserves of coal amounting to 2,06,239.50 million tonnes of which over 60,000 million tonnes are minable, which are sufficient to meet country's coal demand for another 130 years. Industry, railways and the thermal power plants are the largest users of coal in the country.

India's coal production was barely 32.8 million tonnes in 1950-51. The production more or less stagnated during the next ten years, and it was only after 1960-61 that phenomenal growth was witnessed in this field. The production of coal which was around 72.7 million tonnes at the time of nationalisation of the coal industry in 1971-72 rose to a level of 295.93 million tonnes in 1997-98. India is now the fifth largest coal producing country in the world.

The Government of India nationalised the coking coal mines in 1972 and the non-coking coal mines in the following year. Now almost the entire production of coal in the country is under the public sector. Within a few years of the nationalisation of coal mines, Coal India Limited was formed in 1975, as a holding company. The production of coal in the public sector is organised by the Coal India Limited with its seven subsidiaries, viz., Eastern Coalfields Ltd.; Bharat Coking Coal Ltd.; Central Coalfields Ltd.; Western Coalfields Ltd.; South-Eastern Coalfields Ltd.; Northern Coalfields Ltd.; and Central Mine Planning and Design Institute Ltd. The Singareni Collieries Company

Ltd., a joint venture of the Central Government and Andhra Pradesh Government, is also producing coal.

LIGNITE

Neyveli in the South Arcot District of Tamil Nadu is the largest source of lignite (popularly called brown coal) in the country with reserves of small quantities occurring in Gujarat, Rajasthan and Jammu & Kashmir. According to the estimates of the Geological Survey of India, the lignite reserves of lignite in Neyveli are 3,300 million tonnes of which the proven reserves are about 2,000 million tonnes. To exploit the Neyveli lignite reserves for power generation, the Government of India set up the Neyveli Lignite Project in September 1955. In November 1956 the Neyveli Lignite Corporation was established to take over the Neyveli Lignite Project and for exploitation of the lignite reserves for power generation, manufacture of coke, fertilisers and chemicals.

In 1970-71, production of lignite amounted to 3.39 million tonnes. It rose to 5.11 million tonnes by 1980-81. It made phenomenal progress during the sixth plan and attained a high level of 7.84 million tonnes in 1984-85. In 1994-95, the production of lignite was 19.3 million tonnes as against 18.1 million tonnes in 1993-94. In 1997-98 the production of Lignite was 18.11 million tonnes.

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POWER

Power, or electricity as it is commonly known, is the most convenient and versatile form of energy. It plays a key role in the industrial, agricultural and commercial sectors of the economy and is also the most crucial source of supplying

domestic energy requirements. The demand for it has, therefore, been growing at a rate faster than other forms of energy.

The power requirements of our economy are met through network of hydro-electric power stations, thermal power plants and nuclear power plants. Thermal electricity is, however, the largest source of power supply, the installed capacity of thermal power stations is more than double of the installed capacity in the hydroelectric projects. Installed capacity in the nuclear power plants is very insignificant, though it holds out much greater potential of power supply in the coming decades.

Performance of the power sector during the recent years has been quite encouraging. Gross power generation has gone up from about 56 billion kwhs in 1970-71 to 351.02 billion kwhs in 1994-95. In 1997-98, 420.622 billion kwhs of power was generated. The largest share in power generation is contributed by thermal power plants which account for about 73 per cent of the total power generated in the country in 1994-95. Hydel power contributed about 25 per cent, while the nuclear power accounted for only about 2 per cent of the total power generation.

However, in spite of this impressive development in power generation, power shortages still continue in the country. In 1980-81 the gap between demand for power and its supply was 12.6 per cent. It came down to 6.1 per cent in 1984-85, but again rose to over 13 per cent in 1993-94 and remained the same level in 1994-95.

Pattern of Power Consumption: Industry is largest power using sector of the Indian economy. It consumes almost half of the total power supply in the country. However, with the growing modernisation of agriculture its share in power consumption has gone up from 10.2 per cent in 1970-71 to 29.7 per cent in 1993-94. Domestic consumers account for 18.2 per cent of power consumption. Industry is the largest user of power, accounting for 39.6 per cent of the total consumption of electricity in 1993-94.

OIL AND NATURAL GAS

Though the petroleum industry of India dates back to 1866 when oil exploration began in upper Assam and adjoining areas, it made a headway only after Independence, more particularly over the past two decades. Oil is critical to India's economy. Starting with a modest level of indigenous

crude production of only about 0.25 million tonnes in 1950-51, the production of domestic crude oil reached the peak level of 33 million tonnes in 1990-91. During 1991-92 the production of crude oil came down to 30.3 million tonnes and to 27.0 million tonnes in 1992-93 and 1993-94. Measures taken on several fronts brought up the crude production to 32.24 million tonnes in 1994-95 and 32.90 million tonnes in 1996-97. The production of crude oil during 1997-98 was approximately 33.86 million tonnes. The major contribution to the crude oil production has come only after the discovery of the off-shore oil fields, Mumbai High being the most prestigious among them. The production of natural gas, which was 18.3 billion cubic metres per day in 1993-94, increased to 19.4 billion cubic metres in 1994-95. The production of natural gas during 1996-97 was 27.75 billion cubic metres but declined to 24.59 billion cubic metres in 1997-98. The Government is also taking measures to stop flaring of gas, resulting in increased availability of this "Green Fuel" to power projects and industries and even homes through pipelines.

The petroleum industry is entirely in the public sector. There are at present 12 public sector undertakings engaged in the exploration, production, refining, processing and marketing of petroleum products. The total refining capacity has gone up from 52.9 million tonnes in 1992 to 57 million tonnes a year in 1995. The Government is making efforts in not only reducing dependence on imports and saving foreign exchange but also making cheaper refined products and superior quality more easily available in the country.

NON-CONVENTIONAL ENERGY SOURCES

Mineral fuels, coal, petroleum and natural gas, are all exhaustible sources of energy. Enormously growing demand for energy and the increasing exploitation of the available energy resources is causing a rapid depletion in their reserves, which may thus not last for a very long time. Efforts are, therefore, being made to develop non-conventional energy resources which are either non-exhaustible or renewable. Energy from water, wind power, bio-gas, bio-mass and solar energy hold out a major promise in this direction. Since water resources are limited only to a relatively fewer regions, greater stress is being laid on harnessing wind power, solar energy and development of biogas and biomass projects.

37. Major Power Projects

Badarpur thermal power station: Delhi
Baera-Siul hydro-electric project: Himachal Pradesh

Ballmela hydro-electric project: Orissa and Andhra Pradesh

Bandel thermal power station: West Bengal

Barauni thermal power station: Bihar

Cogentrix Power Project: Karnataka

Dhuvaran thermal power station: Gujarat

Ennore thermal power station: Tamil Nadu

Guru Nanak thermal power station: Punjab

Harduaganj thermal project: Uttar Pradesh

Hirakud hydro-electric project: Orissa

Idduki hydro-electric project: Kerala

Kalinadi hydro-electric project: Karnataka

Korba thermal project: Madhya Pradesh

Koradi thermal power station: Maharashtra

Kothagudam thermal project: Andhra Pradesh

Koyana hydro-electric project: Maharashtra

Kundab power project: Tamil Nadu

Loktok hydro-electric project: Manipur

Lower Sileru hydro-electric project: Andhra Pradesh

Machkund hydro-electric project: Andhra Pradesh and Orissa

Maneri-Bhali hydro-electric project: Uttar Pradesh

Mettur project: Tamil Nadu

Naharkatiya thermal project: Assam

Nasik power station: Maharashtra

Neyveli thermal Project station: Tamil Nadu

North Gujarat thermal power station: Gujarat

Obra thermal power station: Uttar Pradesh

Panki thermal power station: Uttar Pradesh

Patratu thermal power station: Bihar

Ramagundam power project: Andhra Pradesh

Rihand hydro-electric project: Uttar Pradesh

Sabarigiri project: Kerala

Salal hydro-electric project: Jammu and Kashmir

Santalidih thermal scheme: West Bengal

Satpura thermal project: Madhya Pradesh and Rajasthan

Sharavathi hydro-electric project: Karnataka

Srisaillam hydro-electric project: Andhra Pradesh

Talcher thermal power station: Orissa

Trombay thermal power project: Maharashtra

Ukal thermal power project: Gujarat

Upper Sileru power station: Andhra Pradesh

Yamuna hydro-electric project: Uttar Pradesh

38. Public Enterprises

The public enterprises comprise all those industrial and commercial undertakings whose ownership belongs to the government and whose management is done either by the government itself or by any other agency appointed by the government for this purpose. All the industrial and commercial undertakings established and run by the Central Government, the State Governments and by the Municipal Committees or Corporations come under the category of the public enterprises. However, this analysis of public enterprises covers only the enterprises of the Central Government excluding the departmental enterprises and the banking companies.

GROWTH OF PUBLIC ENTERPRISES

Public sector in the Indian economy has registered a phenomenal growth since independence. The number of public enterprises under the Central Government was only five at

the beginning of first five-year plan i.e., on April 1, 1951, with a total investment of Rs. 29 crore in them. Not much of industrial development took place during the first plan. The expansion of public sector started from the second plan onwards. During the second plan period, the total investment in the public sector industries was stepped up to Rs. 953 crore and their number went up to 48. Rapid expansion of public sector took place during the next five plans. As on 31st March 1993, the investment has gone up to Rs 147,587 crore in 245 enterprises and further to Rs 164,332 crore in 246 enterprises on 31st March 1994. Thus, during 1993-94, the investment in Public Sector has increased by Rs 16,745 crore registering an increase of 11.35 percent.

INVESTMENT PATTERN

Power sector accounted for an investment of Rs. 31,075 crore, which was 18.91 per cent of the total investment in public enterprises under the

Central Government at the end of March 1994. It was followed by steel, Rs. 20,846 crore (12.68 per cent); coal and lignite, Rs. 16,552 crore (10.07 per cent); petroleum, Rs. 18,828 crore (11.46 per cent); minerals and metals, Rs. 6,950 crore (4.23 per cent) and fertilisers, Rs. 5,996 crore (3.53 per cent). The consumer goods industries accounted for only Rs. 3,092 crore, which was barely 2.00 per cent of the total investment in Central public enterprises. Thus, basic and heavy industries are the major thrust areas of the public sector.

Sales Turnover: The value of total annual sales of public enterprises, which was about Rs. 1,200 crore in 1960-61 shot up to Rs. 7,025 crore in 1970-71 and Rs. 28,635 crore in 1980-81. Since then there has been a near four-fold increase in the sales turnover, the total sales were valued at Rs. 118,355 crore in 1990-91, which rose to Rs. 1,58,192 crore in 1993-94.

PERFORMANCE OF PUBLIC ENTERPRISES

The performance of public enterprises, as judged from the gross rate of profits, has not been very satisfactory. Gross profits as a percentage of total investment (before the payment of interest), remained below 8 per cent up to 1980-81, and has remained around 12.5 per cent ever since then. In 1990-91, the ratio of gross profits to capital employed was 11.2 per cent, which rose to 11.6 per cent in 1991-92, but declined to 11.4 in 1992-93 and remained at the same level in 1993-94.

The pre-tax profit (gross profit minus interest payment), which was only 0.1 per cent of the total

capital employed in 1980-81, improved to 4.7 per cent in 1981-82 and remained around 4 per cent ever since then. In 1993-94, the ratio of pre-tax profits was 4.1 per cent to the total capital employed in the Central Government public sector undertakings.

Net profit (after tax) for these enterprises presents a very dismal picture. For a number of years it was negative showing losses for most of these concerns. However, in 1981-82 and 1982-83 these enterprises recorded some net profits, and the rate of return (after tax) turned positive though still very low at only 2.0 per cent and 2.3 per cent respectively. In 1983-84, net profit rate again declined to 0.8 per cent from which it recovered to 2.5 per cent in 1984-85 and 2.8 per cent in 1985-86. There was further improvement during 1986-87, 1987-88 1988-89 and 1989-90 when the rate of net profit (after tax) increased to 3.4%, 3.7 and 4.4% and 4.5% respectively. In 1990-91, this profit came down to 2.2 per cent. It increased to 2.8 per cent in 1993-94 and further to 2.0 in 1991-92. In spite of this slight improvement, the rate of return on investment is still very disappointing from any commercial viewpoint.

The latest position is that out of 108 PSUs, 45 were rated excellent, 25 very good, 13 good, 22 fair and 3 poor as per an exercise by Department of Public Enterprises (DPE). In 1996-97, the Pre-Tax profit of PSUs, declined to 7.7% from 7.8% in 1995-96. The Government has therefore drawn up a plan for disinvestment of various PSUs as part of its privatisation programme.

39. Transport

RAILWAYS

Indian Railways, which comprise the chief mode of organised transportation system, are the nation's single largest undertaking. Making a small beginning in April 1853 when the first ever railway train in India commenced its journey from Mumbai to Thane, a stretch of only 34 kilometres, the Indian Railways are today Asia's largest and the world's second largest railway system under a single management. As on March 31, 1997 Indian Railways had a route length of 62,525 kilometres. The running track length was 80,754 kilometres and the total track length was 1,07,360 kilometres. Indian Railways are a multigaugage system and

operate on four different gauges—the broad gauge (1,676 mm), the metre gauge (1,000 mm) and the narrow gauge (762 mm and 610 mm).

The Indian Railways had at the end of March 1996, electrification of 19.6 per cent of the route kilometreage, 36 per cent of running track kilometreage and 38 per cent of total track kilometreage. In 1996-97 the total electrified route length was 13,018 km. This is the second biggest electrified system in the world, the first being Russia. The present route length is 62,915 Km comprising Broad Gauge (40,609 Km) Metre Gauge (18,501 Km) and Narrow Gauge (3,794 Km).

The Indian Railway system till August 7, 1996 was divided into following nine zones and further sub-divided into divisions. Each zone was headed by a General Manager, who is responsible to the Railway Board for all the zonal affairs such as operation and maintenance of zonal railways and the financial matters pertaining thereto.

Six new zones have been carved out from the existing zones.

New Zones	Headquarters	Date of Inauguration
1. East-Coast Railway (ECR)	Bhubaneswar	8.8.96
2. North Central Railway (NCR)	Allahabad	28.8.96
3. East Central Railway (ECR)	Hajipur	8.9.96
4. North Western Railway (NWR)	Jaipur	10.10.96
5. South Western Railway (SWR)	Bangalore	1.11.96
6. West Central Railway (WCR)	Jabalpur	9.12.96

In recent years, the trend has been towards modernisation of railways. More routes have been electrified, production of steam locomotives has been discontinued and replaced by electric and diesel locomotives. Signalling and telecommunications have made much headway in modernisation, the standard of track has been brought to a level to run higher speed trains on trunk routes and important main lines, and more amenities have been provided for the common passengers.

The Metro Railway: The Indian Railways entered in the Metro Age with the opening of Calcutta Metro Railway in 1984-85. Out of 16.43 km length Calcutta Metro, 10 km in two separate stretches, one from Esplanade to Tollyganj (7.8 km) in the south and the other from Dum Dum to Belgachia (2.2 km) in the north have been completed and opened to traffic. Work on the balance length from Esplanade to Belgachia has also been completed now.

The Metro system has 17 stations, including the terminals at Dum Dum and Tollyganj. While the two terminals, viz., Dum Dum and Tollyganj are on the surface, the remaining 15 stations are underground.

Circular Railway: The 13.50 kilometres long track from Dum Dum to Princep Ghat for running commuter trains has been in operation since 1990.

Mass Rapid Transit System: Chennai Beach—Chepauk Section (5.04 km) of elevated Chennai Beach—Luz of Chennai Rapid Transport System (8.97 km) became operational in November 1995.

Extension of the project to Vellachery (10.3 km) has also been sanctioned (cost : Rs. 430.2 crores).

Railway Administration: The Indian Railways, being the biggest public sector enterprise in the country, is wholly owned and managed by the Central Government as a departmental undertaking under the charge of the Minister for Railways, who is the chief executive of this department. The operations of railways are controlled and directed by the Railway Board under the overall supervision of the Minister. The Railway Board has a chairman and six other members, including the Financial Commissioner. The chairman of the Railway Board is the ex-officio Principal Secretary, and each of the other six members are the ex-officio Secretaries to the Government of India. The Railway Board, thus, performs the functions of a secretariat to the Railway Ministry and also acts as an executive body for the aging, controlling, planning and development of the railway system in the country.

RAILWAY PRODUCTION UNITS

The Indian Railways have, at present, six production units engaged in production of rolling stock, i.e., engines and coaches and parts thereof. These units are:

1. **Chittaranjan Locomotive Works, Chittaranjan:** It was set up in 1950 for the manufacture of steam locomotives. Production of this type of locomotives has been discontinued since December 1971. At present, it is producing main line electric and diesel-hydraulic shunting locomotives.

2. **Diesel Locomotive Works, Varanasi:** It was set up in 1964 for the manufacture of diesel locomotives from imported components. The imported content has been reduced to negligible and the workshop manufactures broad gauge and metre gauge diesel locomotives, diesel shunters and electric shunters.

3. **Integral Coach Factory, Perambur (Chennai):** It went into production in 1955. It turns out furnished coaches, both broad gauge and metre gauge, electric multiple units, diesel cars and air-conditioned coaches.

4. **Wheel and Axle Plant, Yelahanka (Bangalore):** It went into production in 1983 for the manufacture of wheels and axles. Railways' requirements of wheels and axles are at present met only in part by indigenous production and the rest are being procured from foreign manufacturers. In order to prevent heavy drain on foreign exchange, the plant for the manufacture of wheels and axles has been set up by

Railway Zones

Zones	Headquarters	Route in kilometres	States through which passing
Central	Mumbai V.T.	7,158	Haryana, Kamataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh
Eastern	Calcutta	4,303	Bihar, Madhya Pradesh, Uttar Pradesh and West Bengal
Northern	New Delhi	10,993	Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttar Pradesh, Chandigarh and Delhi
North Eastern	Gorakhpur	5,144	Bihar and Uttar Pradesh
Northeast Frontier	Maligaon (Guwahati)	3,728	Assam, Bihar, Nagaland, Tripura and West Bengal
Southern	Chennai	7,021	Andhra Pradesh, Goa, Karnataka, Kerala and Tamil Nadu
South Central	Secunderabad	7,227	Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtra and Tamil Nadu
South Eastern	Calcutta	7,161	Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Orissa and West Bengal
Western	Mumbai (Churchgate)	9,727	Gujarat, Haryana, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh

5. Diesel Component Works, Patiala (Punjab): The Diesel Component Works at Patiala is the first railway production unit to be established in Punjab. This unit produces components of diesel locomotives of international specifications and, thus, helps to save on precious foreign exchange by substituting the domestically produced components for the imported ones.

6. Rail Coach Factory, Kapurthala (Punjab): The Rail Coach Factory at Kapurthala is the sixth production unit of Indian Railways, and the second one to be located in Punjab. Described as India's largest railway production unit, it manufactures passenger coaches.

RAILWAY PUBLIC UNDERTAKINGS

There are five undertakings under the administrative control of the Ministry of Railways. These are (i) Rail India Technical and Economic Services Limited (RITES), (ii) Indian Railway Construction Company Limited (IRCON), (iii) Indian Railway Finance Corporation Limited (IRFC), (iv) Container Corporation of India Limited (CONCOR) and (v) Konkan Railway Corporation (KRC). Centre for Railway Information System (CRIS) was set up as a registered society to design and implement various railway computerisation projects.

Konkan Railway : The Konkan rail line, which was finally completed with the construction of its

last section, has become fully operational on Roha to Mangalore section from January 26, 1998. An overnight train from Bombay to Goa, may take one further south to Mangalore in another six hours or so and to Thiruvananthapuram or Kanyakumari at the tip of the country about 12 hours later. This has been made possible by the most ambitious and the most difficult railway network ever undertaken by Indian Railways since Independence—*The Konkan Railway Project*. This 760 km stretch joins Roha in Maharashtra with Mangalore in Karnataka (the missing link in the West Coast Railway) and is estimated to have cost Rs. 3,500 crore. The line fords 146 rivers and streams with a total linear waterway of 43 kms and 73 tunnels, with a total length of 48 kms. India's longest railway tunnel so far, 6.5 kms long, falls on this route. A separate organisation, called The Konkan Railway Corporation (KRC), was set up to construct this line in which the Indian Railways and the States of Maharashtra, Karnataka, Goa and Kerala are partners.

ROADWAYS

National Highways: The national highway system is the primary road grid of the country. The construction and maintenance of the national highways is the direct responsibility of the Central Government. The national highways have a total length of 38,517 kilometres. Though accounting for only about 1.3 per cent of the length of the total road network (30,15,229 km in 1994-95) of

NATIONAL HIGHWAYS AND THEIR LENGTHS

Sl. No.	National Highway No.	Route	State through which passing and length (km)
1.	2.	3.	4.
1.	1	Delhi—Ambala—Jalandhar—Amritsar—Indo-Pak Border	Delhi (22), Haryana (180), Punjab (254); Total 456
2.	1 A	Jalandhar—Madhopur—Jammu—Banihal—Srinagar—Baramulla—Uri	Punjab (108), Himachal Pradesh (14), Jammu and Kashmir (541); Total 663
3.	1 B	Batote—Doda—Kishwar	Jammu and Kashmir (107); Total 107
4.	2	Delhi—Mathura—Agra—Kanpur—Allahabad—Varanasi—Mohania—Barhi—Palsit—Baidyabati Bara Calcutta	Delhi (12), Haryana (74), Uttar Pradesh (770), Bihar (392), West Bengal (235); Total 1,490
5.	3	Agra—Gwalior—Shivpuri—Indore—Dhule—Nasik—Thane—Mumbai	Uttar Pradesh (26), Rajasthan (32), Madhya Pradesh (712), Maharashtra (391); Total 1,161
6.	4	Junction with National Highway No. 3 near Thane—Pune—Belgaum—Hubli—Bangalore—Ranipet—Chennai	Maharashtra (371), Karnataka (658), Andhra Pradesh (83), Tamil Nadu (123); Total 1,235
7.	4 A	Belgaum—Anmod—Ponda—Panaji	Karnataka (82), Goa (71); Total 153
8.	4 B	Nhava Sheva—Kalamboli—Palspe	Maharashtra (27); Total 27
9.	5	Junction with National Highway No. 6 near Baharagora—Cuttack—Bhubaneswar—Visakhapatnam—Vijayawada—Chennai	Orissa (488), Andhra Pradesh (1,000), Tamil Nadu (45); Total 1,533
10.	5 A	Junction with National Highway No. 6 near Hariadaspur—Paradip Port	Orissa (77); Total 77
11.	6	Surat—Dhule—Nagpur—Raipur—Sambalpur—Baharagora—Calcutta	Maharashtra (813), Madhya Pradesh (314), Orissa (462), Bihar (22), West Bengal (161); Gujarat (160); Total 1,932
12.	7	Varanasi—Mangawan—Rewa—Jabalpur—Lukhnadon—Nagpur—Hyderabad—Kumool—Bangalore—Krishnagiri—Salem—Dindigul—Madurai—Cape Commorin (Kaniyakumari)	Uttar Pradesh (128), Madhya Pradesh (504), Maharashtra (232), Andhra Pradesh (753), Karnataka (125), Tamil Nadu (627); Total 2,369
13.	7 A	Palyankotta—Tuticorin Port	Tamil Nadu (51); Total 51
14.	8	Delhi—Jaipur—Ajmer—Udaipur—Ahmedabad—Vadodara—Mumbai	Delhi (13), Haryana (101), Rajasthan (688), Gujarat (498), Maharashtra (128); Total 1,428
15.	8 A	Ahmedabad—Limboi—Morvi—Kandla	Gujarat (378); Total 378
16.	8 B	Bamanbore—Rajkot—Porbandar	Gujarat (206); Total 206
17.	8 C	Chiloda—Gandhinagar—Sarkhej	Gujarat (46); Total 46
18.	9	Pune—Sholapur—Hyderabad—Vijayawada	Maharashtra (336), Karnataka (75), Andhra Pradesh (380); Total 791
19.	10	Delhi—Fazilka—Indo-Pak border	Delhi (18), Haryana (313), Punjab (72); Total 403
20.	11	Agra—Jaipur—Bikaner	Uttar Pradesh (51), Rajasthan (531); Total 582
21.	11 A	Dausa—Manoharpur	Rajasthan (64); Total 64

Sl. No.	National Highway No.	Route	State through which passing and length (km)
1.	2.	3.	4.
22.	12	Jabalpur—Bhopal—Khilchipur— Aklera—Jhalawar—Kota—Bundi— Devi—Tonk—Jaipur	Madhya Pradesh (490), Rajasthan (400); Total 890
23.	13	Sholapur—Chitradurga	Maharashtra (43), Karnataka (448); Total 491
24.	14	Beawar—Sirohi—Radhanpur	Rajasthan (310), Gujarat (140); Total 450
25.	15	Pathankot—Amritsar—Bathinda— Ganganagar—Bikaner—Jaisalmer— Barmer—Samakhiali (near Kandla)	Punjab (350), Rajasthan (906), Gujarat (270); Total 1,526
26.	16	Nizamabad—Mancheret—Jagadapur	Andhra Pradesh (220), Maharashtra (30), Madhya Pradesh (210); Total 460
27.	17	Parvel—Mahad—Panaji—Karwar— Mangalore—Cannanore—Calicut (Kozhikode)—Feroke—Kullipuram— Pudu Ponnani—Chowghat— Cranganur Junction with National Highway No. 47 near Edappai	Maharashtra (482), Goa (139), Karnataka (280), Kerala (368); Total 1,269
28.	17 A	Junction with National Highway No. 7 near Cortalin—Marmugao	Goa (19); Total 19
29.	17 B	Ponda—Verna—Vasco	Goa (40); Total 40
30.	18	Junction with National Highway No. 7 near Kumool—Nandya—Cuddapah, Junction with National Highway No. 4 near Chittoor	Andhra Pradesh (369); Total 369
31.	19	Ghaziपुर—Ballia—Patna	Bihar (120), Uttar Pradesh (120); Total 240
32.	20	Pathankot—Mandi	Punjab (10), Himachal Pradesh (210); Total 220
33.	21	Junction with National Highway No. 22 near Chandigarh—Ropar— Bilaspur—Mandi—Kullu—Manali	Chandigarh (24), Punjab (67), Himachal Pradesh (232); Total 323
	22	Ambala—Kalka—Shimla—Narkanda— Rampur—Chini—Indo-Tibet border near Shipkila	Haryana (30), Punjab (31), Himachal Pradesh (398); Total 459
35.	23	Chas—Ranchi—Rourkela—Talcher Junction with National Highway No. 42	Bihar (250), Orissa (209); Total 459
36.	24	Delhi—Bareilly—Lucknow	Delhi (7), Uttar Pradesh (431); Total 438
37.	25	Lucknow—Kanpur—Jhansi—Shivpuri	Uttar Pradesh (237), Madhya Pradesh (82); Total 319
38.	26	Jhansi—Lukhnadon	Uttar Pradesh (128), Madhya Pradesh (268); Total 396
39.	27	Allahabad—Mangawan	Uttar Pradesh (43), Madhya Pradesh (50); Total 93
40.	28	Junction with National Highway No. 31 near Barauni—Muzaffarpur— Pipra—Gorakhpur—Lucknow	Bihar (259), Uttar Pradesh (311); Total 570
41.	28 A	Junction with National Highway No. 28 near Pipra—Sagauli— Raxaul—Indo-Nepal border	Bihar (68); Total 68

<i>Sl. No.</i>	<i>National Highway No.</i>	<i>Route</i>	<i>State through which passing and length (km)</i>
<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>
42.	29	Gorakhpur—Ghazipur—Varanasi	Uttar Pradesh (196); Total 196
43.	30	Junction with National Highway No. 2 near Mohania—Patna—Bakhtivarpur	Bihar (230); Total 230
44.	31	Junction with National Highway No. 2 near Barhi—Bakhtivarpur—Mokameh—Purnea—Dalkola—Siliguri—Sivok—Cooch Behar—North Salmara—Nalbari—Charali Amingaon Junction with National Highway No. 37	Bihar (437), West Bengal (366), Assam (322); Total 1,125
45.	31 A	Sivok—Gangtok	West Bengal (30), Sikkim (62); Total 92
46.	31 B	North Salmara—Junction with National Highway No. 37 near Jogighopa	Assam (19); Total 19
47.	31 C	Near Galgalla—Baghdogra—Chalsa—Nagrakata—Goyerkata—Dalgaon—Hasimara—Rajabhat—Khawa—Kochugaon—Sidili Junction with National Highway No. 31 near Bijni	West Bengal (142), Assam (93); Total 235
48.	32	Junction with National Highway No. 2 near Gobindpur—Dhanbad—Jamshedpur	Bihar (107), West Bengal (72); Total 179
49.	33	Junction with National Highway No. 2 near Barhi—Ranchi Junction with National Highway No. 6 near Baharagora	Bihar (352); Total 352
50.	34	Junction with National Highway No. 31 near Dalkola—Berhampore—Barasat—Calcutta	West Bengal (443); Total 443
51.	35	Barasat—Bangaon—Indo-Bangladesh border	West Bengal (61); Total 61
52.	36	Nowgong—Dimapur (Manipur Road)	Assam (167), Nagaland (3); Total 170
53.	37	Junction with National Highway No. 31B near Goalpara—Guwahati—Jorabat—Kamargaon—Makum—Saikhoaghat	Assam (680); Total 680
54.	37 A	Kuarital—Junction with National Highway No. 52 near Tezpur	Assam (23); Total 23
55.	38	Makum—Ledo—Lekhapani	Assam (54); Total 54
56.	39	Numaligarh—Imphal—Palet—Indo-Burma border	Assam (115), Nagaland (110), Manipur (211); Total 436
57.	40	Jorabat—Shillong—Indo-Bangladesh border near Dawki	Meghalaya (161); Total 161
58.	41	Junction with National Highway No. 6 near Kolaghat—Haldia Port	West Bengal (51); Total 51
59.	42	Junction with National Highway No. 6 near Sambalpur—Angul Junction with National Highway No. 5 near Cuttack	Orissa (261); Total 261
60.	43	Raipur—Vizianagaram Junction with National Highway No. 5	Madhya Pradesh (316), Orissa (152), Andhra Pradesh (83); Total 551
61.	44	Shillong—Passi Badarpur—Agartala—Sabroom	Meghalaya (184), Assam (111), Tripura (335); Total 630
62.	45	Chennai—Tiruchirapalli—Dindigut	Tamil Nadu (387); Total 387

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25.	15	Pathankot—Amritsar—Bathinda— Ganganagar—Bikaner—Jaisalmer— Barmer—Samakhiali (near Kandla)	Punjab (350), Rajasthan (906), Gujarat (270); Total 1,526
26.	16	Nizamabad—Mancherel—Jagadapur	Andhra Pradesh (220), Maharashtra (30), Madhya Pradesh (210); Total 460
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30.	18	Junction with National Highway No. 7 near Kumool—Nandyal—Cuddapah, Junction with National Highway No. 4 near Chittoor	Andhra Pradesh (369); Total 369
31.	19	Ghazipur—Ballia—Patna	Bihar (120), Uttar Pradesh (120); Total 240
32.	20	Pathankot—Mandi	Punjab (10), Himachal Pradesh (210); Total 220
33.	21	Junction with National Highway No. 22 near Chandigarh—Ropar— Bilaspur—Mandi—Kullu—Manali	Chandigarh (24), Punjab (67), Himachal Pradesh (232); Total 323
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56.	39	Numaligarh—Imphal—Palel—Indo-Burma border	Assam (115), Nagaland (110), Manipur (211); Total 436
57.	40	Jorabat—Shillong—Indo-Bangladesh border near Dawki	Meghalaya (161); Total 161
58.	41	Junction with National Highway No. 6 near Kolaghat—Haldia Port	West Bengal (51); Total 51
59.	42	Junction with National Highway No. 6 near Sambalpur—Angul Junction with National Highway No. 5 near Cuttack	Orissa (261); Total 261
60.	43	Raipur—Vizianagaram Junction with National Highway No. 5	Madhya Pradesh (316), Orissa (152), Andhra Pradesh (83); Total 551
61.	44	Shillong—Passi Badarpur—Agartala—Sabroom	Meghalaya (184), Assam (111), Tripura (335); Total 630
62.	45	Chennai—Tiruchirapalli—Dindigul	Tamil Nadu (387); Total 387

Sl. No.	National Highway No.	Route	State through which passing and length (km)
1.	2.	3.	4.
63.	45 A	Link to Pondicherry (Villupuram—Pondicherry)	Tamil Nadu (17), Pondicherry (23); Total 40
64.	46	Krishnagiri-Ranipet	Tamil Nadu (132); Total 132
65.	47	Salem—Coimbatore—Trichur—Emakulam—Thiruvananthapuram—Cape Commorin (Kaniyakumari)	Tamil Nadu (224); Kerala (416); Total 640
66.	47 A	Junction with National Highway No. 47 near Willington Island	Kerala (6); Total 6
67.	48	Bangalore-Hassan—Mangalore	Karnataka (328); Total 328
68.	49	Cochin—Madurai—Dhanushkodi	Tamil Nadu (290), Kerala (150); Total 440
69.	50	Nasik—Junction with National Highway No. 4 near Pune	Maharashtra (192); Total 192
70.	51	Paikan—Tura—Dalu	Assam (22), Meghalaya (127); Total 149
71.	52	Baihata—Charali—Tezpur—Bander Dewa—North Lakhimpur—Paslghat—Tezu—Sitapani Junction with National Highway No. 37 near Saikhoghat	Assam (540), Arunachal Pradesh (310); Total 850
72.	52 A	Bander Dewa—Itanagar—Gohpur	Assam (5), Arunachal Pradesh (42); Total 57
73.	52 B	Kalajan—Dibrugarh	Assam (31); Total 31
74.	53	Junction with National Highway No. 44 near Badarpur—Jirighat Imphal—Silchar	Assam (100), Manipur (220); Total 320
75.	54	Silchar—Alzawi—Tuipang	Assam (45), Mizoram (515); Total 560
76.	54 A	Theriat—Lunglei	Mizoram (9); Total 9
77.	54 B	Venus Saddle Saiha	Mizoram (27); Total 27
78.	55	Siliguri—Darjeeling	West Bengal (77); Total 77
79.	56	Lucknow—Varanasi	Uttar Pradesh (285); Total 285
80.	NEI	Ahmedabad—Vadodara	Gujarat (93); Total 93
81.	57	Muzaffarpur—Darbhanga—Forbesganj—Purnea	Bihar (310); Total 310
82.	58	Ghaziabad—Meerut—Haridwar—Badrinath—Mana Pass	Uttar Pradesh (527); Total 527
83.	59	Ahmedabad—Godhra—Dhar—Indore	Gujarat (211), Madhya Pradesh (139); Total 350
84.	60	Balasore—Kharagpur	Orissa (57), West Bengal (68); Total 125
85.	61	Kohima—Wokha—Mukokchung—Jhanji	Nagaland (220), Assam (20); Total 240
86.	62	Damra—Baghmara	Assam (5), Meghalaya (125); Total 130
87.	63	Ankola—Hubli—Hospet—Gooty	Karnataka (370), Andhra Pradesh (62); Total 432
88.	64	Chandigarh—Rajpura—Patiala—Sangrur—Bathinda	Punjab (225); Total 225
89.	65	Ambala—Kailthal—Hissar—Fatehpur	Haryana (240), Rajasthan (170); Total 410
90.	66	Pondy—Tindivanam—Gingee—Thiruvananthapuram—Krishnagiri	Pondicherry (10), Tamil Nadu (234); Total 244
91.	67	Nagapattinam—Trichy—Karur	Tamil Nadu (217); Total 217
92.	68	Uliundurpet—Salem	Tamil Nadu (134); Total 134
93.	69	Nagpur—Obaidullaganj	Maharashtra (55), Madhya Pradesh (295); Total 350
All-India			Total : 38,517 km

the country the national highways carry 40% of the total traffic.

State Highways and Major District Roads: The State highways and major district roads form the secondary road system and take care of collector and distributor functions. They are the responsibility of the State Government and are maintained through various agencies in the State and Union Territories.

Road Network: With 30.15 lakh kilometres of road length, India can boast as having the third largest road network in the world. From a road length of about 4 lakh kilometres in 1950-51, the road network has expanded more than seven folds.

Despite this impressive growth in road network, about 36 per cent of villages in India remain without any road link while 65 percent villages do not have all weather roads. Less than half of the total road length has a metalled surface, most of the rural roads are unsurfaced, unmetalled or 'kuchcha' roads. In terms of area and population, the total road length in the country works out to about 19 km for every 100 sq km of area and about 80 km for every one lakh of population. The surfaced road length is about 13 km for every 100 sq km of area and about 61 km for every one lakh of population. The 8th Plan has provided an outlay of 13,210 crores over 2½ times of 7th Plan allocation (Rs. 5,200 crores) for new roads and improvement of road net work.

AIR TRANSPORT

Air transport in India operates at three levels. At the international level, Air India operates its services to the five continents. Domestic services are operated by the Indian Airlines which also operates flights to the neighbouring countries. The third services, viz., Vayudoot, which initially operated its services in the north-eastern region of the country where surface transport was inadequate and terrain difficult, has now extended its services to other parts of the country. Recently, private airlines such as Sahara, Jet Air, Archana, UP Air, Jagson, etc. have also been introduced in India.

A helicopter service operated by the Pawan Hans Ltd. has been introduced since October 1985, with the objective of meeting the requirements of petroleum sector, including ONGC. Now Pawan Hans also operates services to inaccessible areas

and difficult terrains, provides tourist services, and undertakes intra-city transportation for the carriage of passengers and mail.

MAJOR AIRPORTS

There are five international airports, 88 domestic aerodromes and 28 civil enclaves in the country. The international airports are: Mumbai (Sahar); Calcutta (Dum Dum); Delhi (Indira Gandhi); Chennai (Meenambakkam) and Thiruvananthapuram. Some international flights also operate from Amritsar (Rajasanis). The operation, management, maintenance, planning and development of international airports is done by the International Airport Authority of India (IAAI) which was set up in 1972.

Among the major domestic airports are the aerodromes at Ahmedabad, Agartala, Amritsar, Aurangabad, Bangalore, Bhubaneswar, Calcutta, Delhi, Guwahati, Hyderabad, Imphal, Khajuraho, Lucknow, Mangalore, Nagpur, Patna, Ranchi, Shillong, Thiruvananthapuram, Tiruchirappalli, Udaipur, Varanasi, etc. Besides, there are civil enclaves in many of the aerodromes of the defence forces.

The domestic aerodromes which were earlier managed by the Civil Aviation Department of the Government of India, are now looked after by the National Airport Authority of India, which was established in 1986. The NAAI is responsible for the management, construction, maintenance, development and other operational functions at the domestic aerodromes.

SHIPPING

India's shipping tonnage, though sizeable in magnitude, is not as high as that of other maritime nations of the world. India has a fleet of 478 vessels of 6.843 million GRT (gross registered tonnage) in 1997-98, Indian shipping accounts for only one per cent of the total world fleet.

There were 83 shipping companies as on 31 March, 1998 of which one, viz., the Shipping Corporation of India (in which Mogul Lines Ltd. merged in June 1986) is in the public sector and the remaining are in the private sector. The Shipping Corporation of India owns nearly half of India's total merchant fleet. The top 12 companies, including the Shipping Corporation of India, make up for shipping tonnage.

Of the 83 shipping companies, 49 are engaged exclusively in coastal trade, 19 in overseas trade and the remaining (including the public sector company) carry on overseas as well as coastal trade. Even with such large number of companies and substantial shipping tonnage, Indian ships carry only about 29 per cent of country's seaborne trade, of which petroleum accounts for a larger part (54% in 1994-95).

MAJOR PORTS

There are 11 major ports and 139 minor working ports along India's coastline of about 5,600 km. While major ports are the direct responsibility of the Central Government, minor ports and intermediate ports fall in the Concurrent List of the Constitution and are managed and administered by the respective maritime State Governments.

The major ports on the west coast of India are Mumbai, Nhava Sheva (Jawaharlal Nehru Port), Kandla, Mormugao, New Mangalore and Cochin. On the east coast, the major ports are Tuticorin, Chennai, Visakhapatnam, Paradip and Calcutta-Haldia.

Mumbai is the biggest port in the country. It is a natural harbour and handles more than one-fifth of the total traffic of the ports. The bulk of the total traffic consists of petroleum products and dry cargo.

Calcutta is a riverine port handling diversified commodities. It is the largest terminal port in South Asia. Haldia dock-system is in operation since February 1977. It has a fully equipped containerised berth. Its mechanised dock system with provision for deep draft vessels down stream of Calcutta supplements the facilities already

available at Calcutta port. It mainly handles coal, petroleum products and dry cargo.

Cochin is a natural harbour on the west coast. It largely handles petroleum products, fertilisers, raw materials and general cargo.

Kandla is a tidal port having a free trade zone. It largely handles petroleum products and fertilisers. Foodgrains, cotton, cement and edible oils are also being handled.

Chennai is one of the oldest ports on the east coast and caters to traffic in iron ore, petroleum products and dry cargo.

New Mangalore on the west coast was declared a major port in 1974. Facilities have been developed at this port for the export of Kudremukh iron ore. Fertilisers, petroleum products, granite stones and dry cargo are handled at this port.

Mormugao (Goa) enjoys the second position of total traffic tonnage, bulk of which is iron ore for export.

Paradip in Orissa mainly handles iron ore, coal and general cargo.

Tuticorin on the east coast was declared a major port in 1974. It handles mainly salt, coal, edible oils, foodgrains, fertilisers, petroleum products and dry cargo.

Visakhapatnam is the deepest landlocked and protected port where an outer harbour has been developed for exporting mainly iron ore to Japan. Crude oil, petroleum products, coal and dry cargo are also handled.

Nhava Sheva (Jawaharlal Nehru Port) is India's 11th and the biggest most modern seaport off Mumbai. This port has large berthing facilities, latest traffic and cargo handling equipment and most modern operational techniques.

40. Foreign Trade

Before Independence, the pattern of trade in India was largely colonial and agricultural. The bulk of our foreign trade was confined to Britain and other Commonwealth countries. After Independence there has been impressive industrial development in the country and India's foreign trade has undergone a complete change. It is no longer confined to a few countries trading in a few commodities. We have trading links with practically all the countries of the world.

The items under exports cover over 7,500 commodities to about 190 countries, while imports from about 140 countries account for over 6,000 commodities.

The table below shows the position during the last 9 years of nineties:-

Year	Exports	Imports	(Rs. Crores) Balance of Trade
1990-91	32,553	43,198	-10,645
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1991-92	44,041	47,851	-3,810
1992-93	53,688	63,375	-9,687
1993-94	69,751	73,101	-3,350
1994-95	82,674	89,971	-7,297
1995-96	1,06,353	1,22,678	-16,325
1996-97	1,17,526	1,36,835	-19,319
1997-98	1,20,614	1,44,573	-23,959
1998-99	1,41,604	1,76,099	-34,495

During April-September, 1998, while exports grew by 12.3% to Rs. 67,834 crore, imports rose by as much as 27.8% to Rs. 88,642 crore, leading to a trade imbalance of Rs. 20,803 crore in contrast to Rs. 8,966 registered in the corresponding period of 1997-98.

The principal commodities exported out of India are gems and jewellery, readymade garments, tea and coffee, iron ore, chemicals and allied products, cotton fabrics, jute manufacture, handmade carpets, cashew kernels, spices, etc. The imports include petroleum and petroleum products, machinery and transport equipment, iron and steel, vegetable oils, organic and inorganic chemicals, wheat, non-ferrous metals, etc.

The principal sources of India's imports are the OECD group of countries which includes the USA, Canada, EEC countries, Australia, Japan, etc. The US is the largest single source in imports. The CIS and other East European nations, and the OPEC countries are our other major import sources.

The US has emerged as the single largest buyer of Indian goods relegating the CIS to a lower position. However, East European countries as a whole, including the CIS, are our major buyers. Our exports to developing countries of Africa are also showing consistent improvement.

New Exim Policy Announced : The government announced a five-year (1997-2002) export-import policy on March 31, 1997. The new policy extended import liberalisation of several items, including a host of consumer items, which can now be imported without a licence or against the freely-transferable Special Import Licence (SIL) issued to exporters.

The policy has also restructured the export promotion schemes. The existing Value-Based Advance Licencing (VABAL) Scheme and the Passbook Scheme will be replaced by the Duty Entitlement scheme. Under the new scheme, exporters will be granted duty credits which will allow them to import inputs duty-free at notified rates.

Exports from agriculture, small scale and high-technology sectors have got special incentives. A larger number of agencies have also been allowed to import and stock gold to help jewellery exporters. Deemed exports facilities have been extended to oil and gas sectors. The software industry has been allowed to import goods on

loans from clients for a specified period. The import duty under the Export Promotion Capital Goods (EPCG) scheme has been reduced from 15 per cent to 10%.

The policy has also provided benefits for products from North-Eastern states and small units—an additional SIL of 1 per cent on total value of exports will be given to export houses, where such exports constitute 10 per cent of their total exports. Additional SIL will also be given to exporters who venture out into new markets. To improve quality, exporters with ISO 9000 series or IS/ISO 9000 certification will be entitled to a higher SIL of 5 per cent against the present 2 per cent.

Modified Exim Policy : Meanwhile in a bid to revive the flagging export growth, the BJP-led government has opened up the economy further by freeing import of a large number of consumer goods and by liberalising all major export promotion schemes. Thus the import restrictions on 340 items including fruits, vegetables, processed food products, video cameras, CD, camcorder, monitors, furniture, paints, premium wrist watches, toy and sports goods etc. have been scrapped.

In addition, import of shrimp, onion, preserved mushrooms, diabetic beverages, medicated soap, fax paper, safety razor blades, tiles and fabrics have also been liberalised in line with the commitments undertaken by U.F. government while entering into pacts with European Union, Canada, Australia and New Zealand for settling the WTO row on quantitative restrictions. Another round of liberalisation has also been promised.

The liberalisation announced by the former Commerce Minister, Mr. R.K. Hegde on April 13, 1998, as part of the annual Export-Import Policy modifications is significant in the light of the global pressure on India to remove import curbs, as also the proposed review of India's trade policy by WTO in the background of USA's complaint against India's import regime.

The government has set up an ambitious export growth target of 20% to push the exports to \$41.5 billion in 1998-99 from \$34.5 billion in 1997-98. Other measures include setting up an anti-dumping cell, bid to relax bank guarantee norms, simplification of licensing procedures, speedy issue of advance licences, easier capital goods import for software, garments, electronics and steps initiated for a stable agro-export policy.

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IMPORT Q - RINCIPAL COMMODITIES

		(Rs. Crores)					
Commodities		1992-93	1993-94	1994-95	1995-96	* 1996-97*	1997-98* 1998-99**
A.	Bulk Imports	27,609.51	28,236.44	35,440.01	38,098	55,510	54,329 55,179
	i) Cereals	965.83	290.39	108.36	80	487	1,083 979
	ii) Fertilizer	2,831.62	2,597.72	3,246.08	5,628	3,235	4,150 4,516
	iii) Newsprint	357.32	464.76	489.60	1,013	1,096	1,047 1,004
	iv) Petroleum and Petroleum products	17,141.70	18,045.13	18,628.96	25,173	35,629	30,341 27,064
	v) Edible oil	166.88	166.63	609.71	2,261	2,929	2,765 7,131
	vi) Pulp and waste paper	409.02	497.33	619.07	920	823	1,055 973
	vii) Non-ferrous metals	1,143.57	1,503.91	2,688.88	3,023	3,925	3,420 2,823
B.	Pearls, precious and semi-precious stones	7,072.26	8,294.15	5,018.76	7,044	10,384	12,421 15,827.
C.	Machinery	8,997.91	9,888.92	13,381.76	19,360	21,225	20,342 18,905
D.	Project Goods	3,702.79	3,684.92	5,133.81	7,997	7,520	6,465 8,609
E.	Others :-	15,991.71	22,998.58	30,996.68	50,179	42,281	60,618 77,578
	i) Organic and inorganic chemicals	4,134.42	4,312.53	6,838.31	8,581	9,446	10,986 11,435
	ii) Coal, coke and briquettes	1,383.11	1,463.33	2,208.43	3,095	3,532	4,432 3,954
	iii) Medicinal and pharmaceutical products	813.27	808.76	859.29	1,357	1,089	1,447 1,447
	iv) Artificial resins etc.	1,218.01	1,362.88	1,937.73	2,687	2,826	2,574 2,781
TOTAL IMPORTS (including Others)		63,374.51	73,101.01	89,971.02	1,22,678	1,36,844	1,44,573 1,76,099

Source: DGC & S, Calcutta

* Rounded Figures

** Provisional

EXPORT OF PRINCIPAL COMMODITIES

(Rs. Crores)

S. No.	Commodities	1992-93	1993-94	1994-95	1995-96	* 1996-97**	1997-98*	1998-99**
1.	Plantations	1,352.81	1,604.76	1,993.76	2,674	2,464	3,572	4,005
2.	Agricultural and Allied Products	5,804.22	7,828.32	7,476.89	14,184	16,317	15,745	16,627
3.	Marine Products	1,743.15	2,551.89	3,521.97	3,381	4,008	4,487	4,368
4.	Ores and Minerals	2,136.73	2,785.75	3,134.81	3,930	4,162	3,943	3,748
5.	Leather and Manufactures	3,699.95	4,076.02	4,889.40	5,861	5,701	6,157	6,956
6.	Sports Goods	101.34	139.51	202.51	247	277	300	303
7.	Gems and Jewellery	8,896.52	12,532.36	14,133.56	17,644	16,872	19,867	24,839
8.	Chemicals and related Products	5,136.52	7,799.71	10,131.56	12,676	14,564	16,914	17,586
9.	Engineering Goods	6,476.17	8,461.08	9,416.54	12,065	14,396	16,484	16,002
10.	Electronics and Computer Software	614.96	1,023.30	1,436.52	2,513	3,035	3,045	2,372
11.	Project Goods	66.71	44.86	59.72	109	187	303	205
12.	Textiles	12,881.75	15,381.84	20,470.62	24,980	28,581	31,609	35,386
13.	Handicrafts	800.97	999.09	1,200.93	1,451	1,689	1,954	2,633
14.	Carpets	1,558.73	1,782.20	1,743.57	1,884	2,096	2,028	2,250
15.	Petroleum Products	1,379.25	1,247.79	1,308.98	1,517	1,710	1,311	1,376
16.	Unclassified Exports	856.70	836.78	1,076.11	1,029	1,205	1,560	3,728
GRAND TOTAL (Including Others)		53,688.97	69,748.95	82,338.01	1,06,353	1,17,525	1,20,614	1,41,604

Source: DGCI & U, Calcutta

* Rounded Figures

** Provisional

41. Devaluation

In view of the precarious balance of payments situation and the consequent necessity to drastically cut imports and boost exports, the Reserve Bank of India devalued the Indian Rupee against four major world currencies viz. U.S. Dollar, British Pound Sterling, French Franc and the German Mark. The devaluation was resorted to in two successive instalments on July 1, 1991 and again on July 3, 1991. The July 1 devaluation reduced the value of the rupee between 8.7 per cent and 9.8 per cent, which on July 3, it was further reduced by 11.8 per cent to 12.3 per cent. The overall depreciation in the value of the Rupee was thus between 19 to 21 per cent. With this devaluation the value of Pound Sterling changed from £1 = Rs. 41.6 on July 3, 1991. Similarly the value of U.S. Dollar changed from \$ 1 = Rs. 21.0 to \$ 1 = Rs. 25.9 between June 28 and July 3, 1991.

The Government, however, maintained that this downward revision in the value of the Rupee was not devaluation but only a normal process of adjustment. Although there has been continuous depreciation of the Rupee since 1970-71 when it was pegged to a basket of currencies, the present depreciation of around 20 per cent is the highest in one go. The last devaluation of the Rupee took place in 1966 when its value was lowered by over 33 per cent.

It was being felt that over the years the rupee was maintained at an artificially high value which in turn distorted the entire economy and trade of the country. Abnormally high tariff walls had to be put up to limit imports while exports had to be subsidised heavily to make them internationally competitive. The IMF too was building up pressure on India to devalue her currency to the extent of 22 per cent so that the Rupee finds its real place and helps to reduce balance of payments deficits. The present devaluation seems to be, at least partly, under the direct pressure of the IMF, as a precondition for massive loan that India was negotiating to meet her current economic crisis.

After a reasonable stability lasting for a period of about 18 months, the exchange rate of Rupee against the \$ came under downward pressure intermittently since the last week of August 1997. However, since September 1998 the Rupee showed slight appreciation against US\$. The downward pressure on the exchange rate of the rupee since fast August 1997 is largely attributable to the East Asian financial crisis and uncertainties related to domestic developments. At the end of January 1999, the exchange rate of Rupee vis-a-vis. US \$ was Rs. 42.50, recording a cumulative depreciation of about 7.1% from the end-March 1998 level of Rs. 39.50. Presently, the Rupee is hovering between Rs. 42 and Rs. 43 vis-a-vis US\$.

The central unit of Indian currency system is the rupee, which exists both in the form of a coin as well as a currency note. There are currency notes of higher denomination, viz., Rs. 2, Rs. 5, Rs. 10, Rs. 20, Rs. 50, Rs. 100 and Rs. 500, in circulation. Prior to January 1957, the subsidiary coins existed in the form of eight annas (half-a-rupee), four annas (quarter of a rupee), two annas (eighth of a rupee), one anna (sixteenth of a rupee), two paise (half anna) and one paisa (quarter of one anna) coins. The pie (one-third of a paisa) was also there in name, but was practically extinct. These were the traditional subsidiary coins.

Decimal Currency System: With the Indian Coinage (Amendment) Act 1955 which came into force from April 1, 1957, Indian currency system was converted into a decimal system. With this, a new set of subsidiary coins was introduced and

the rupee became equal to 100 paise (originally the nomenclature was naya paisa, which was later changed to paisa). The first one paisa coin under the decimal system was issued in March 1962 and the first one rupee coin under this system issued in July 1962. The range of subsidiary coins under the new system comprised one paisa, two paise, five paise, ten paise, twenty-five paise and fifty paise. Between 1957 and 1964, both the traditional and the new subsidiary coins were in circulation, but since 1964, it is only the decimal coins, which form a part of the currency system. A three paise coin was introduced in 1965 and a twenty paise coin introduced a little later. The smaller coins are now out of use. Coins of two rupee and five rupee denomination have also now been introduced. Now, the Indian currency system has been completely decimalised.

43. Banking

In order to assume commanding heights of the economy, the Government of India nationalised 14 major commercial banks in July 1969. Another six commercial banks were nationalised in April 1980. But in September 1993, the New Bank of India, which was running at a loss, was merged with the Punjab National Bank. These 19 nationalised banks along with the State Bank of India, which was nationalised in 1956, now constitute the public sector banks. The names of the public sector banks are:

Allahabad Bank
Andhra Bank
Bank of Baroda
Bank of India
Bank of Maharashtra
Canara Bank
Central Bank of India
Corporation Bank
Dena Bank
Indian Bank
Indian Overseas Bank
Oriental Bank of Commerce
Punjab National Bank
Punjab and Sind Bank
State Bank of India and its subsidiary banks
Syndicate Bank
UCO Bank
Union Bank of India
United Bank of India
Vijaya Bank

The State Bank of India is the largest commercial bank of the country and is among the 100 topmost banks in the world, outside the United States of America. The State Bank has seven subsidiary banks attached to it. These are: (i) State Bank of Bikaner and Jaipur, (ii) State Bank of Hyderabad, (iii) State Bank of Indore, (iv) State Bank of Mysore, (v) State Bank of Patiala, (vi) State Bank of Saurashtra and (vii) State Bank of Travancore.

Besides these public sector banks which control over 90 per cent of the banking activity in the country, there are non-nationalised scheduled banks and non-scheduled banks. A bank which has capital and reserves of over Rs. 5 lakh is called a scheduled bank and those which have capital and reserves lesser than this limit prescribed by the RBI Act, are categorised as non-scheduled banks.

The number of reporting scheduled commercial banks, both nationalised and non-nationalised, stood at 338 at the end of December 1997. There were also two non-scheduled banks. Besides, there were 20 foreign banks operating in the country.

Of the scheduled commercial banks, 223 are in the public sector and these account for about 85 per cent of commercial banking system. Within the public sector banking system, 198 banks are regional rural banks and 27 banks are regular commercial banks and they transact all types of commercial banking business. Subsequent to the issue of guidelines in January 1993 for the entry of new private sector banks the RBI granted approval for the setting up of 13 new privately owned domestic banks. Out of these 10 have already started functioning. These include UTI Bank Ltd. (Registered Office : Ahmedabad); Indust Bank Ltd. (Pune); ICICI Bank Ltd. (Baroda); Global Trust Bank Ltd. (Secunderabad); HDFC Ltd. (Mumbai); Centurion Bank Ltd. (Panaji); Bank of Punjab Ltd. (Chandigarh); Times Bank Ltd. (Faridabad); IDBI Bank Ltd. (Indore) and Development Credit Bank Ltd. (Mumbai).

Number of Bank Offices/Branches: In the early years of independence, the number of bank offices was very small. For example, in June 1951, the number of bank offices (both scheduled and non-scheduled banks) was only 5,115. The number of offices increased to 6,155 in June 1951 and even prior to nationalisation, the number was at 9,252 in June 1959. However, after the nationalisation of major banks in July 1969, the process of expansion gained momentum. As the end of March 1998, there were over 32,545 bank offices in India which possess offices of the foreign banks in India. The major bank in terms of branches in the country was State Bank of India. Since 1993, the RBI has been issuing licences for setting up of new banks. As a result, the number of banks in the country has increased significantly.

Bank Deposits: After the nationalisation of major commercial banks in the country, there has been a rapid growth in the deposits. The deposits of the public sector banks have increased from Rs. 1,000 crore in 1959 to Rs. 1,00,000 crore in 1997. The deposits of the private sector banks have also increased from Rs. 1,000 crore in 1959 to Rs. 1,00,000 crore in 1997.

41. Devaluation

In view of the precarious balance of payments situation and the consequent necessity to drastically cut imports and boost exports, the Reserve Bank of India devalued the Indian Rupee against four major world currencies viz. U.S. Dollar, British Pound Sterling, French Franc and the German Mark. The devaluation was resorted to in two successive instalments on July 1, 1991 and again on July 3, 1991. The July 1 devaluation reduced the value of the rupee between 8.7 per cent and 9.8 per cent, which on July 3, it was further reduced by 11.8 per cent to 12.3 per cent. The overall depreciation in the value of the Rupee was thus between 19 to 21 per cent. With this devaluation the value of Pound Sterling changed from £1 = Rs. 41.6 on July 3, 1991. Similarly the value of U.S. Dollar changed from \$ 1 = Rs. 21.0 to \$ 1 = Rs. 25.9 between June 28 and July 3, 1991.

The Government, however, maintained that this downward revision in the value of the Rupee was not devaluation but only a normal process of adjustment. Although there has been continuous depreciation of the Rupee since 1970-71 when it was pegged to a basket of currencies, the present depreciation of around 20 per cent is the highest in one go. The last devaluation of the Rupee took place in 1966 when its value was lowered by over 33 per cent.

It was being felt that over the years the rupee was maintained at an artificially high value which in turn distorted the entire economy and trade of the country. Abnormally high tariff walls had to be put up to limit imports while exports had to be subsidised heavily to make them internationally competitive. The IMF too was building up pressure on India to devalue her currency to the extent of 22 per cent so that the Rupee finds its real place and helps to reduce balance of payments deficits. The present devaluation seems to be, at least partly, under the direct pressure of the IMF, as a precondition for massive loan that India was negotiating to meet her current economic crisis.

After a reasonable stability lasting for a period of about 18 months, the exchange rate of Rupee against the \$ came under downward pressure intermittently since the last week of August 1997. However, since September 1998 the Rupee showed slight appreciation against US \$. The downward pressure on the exchange rate of the rupee since last August 1997 is largely attributable to the East Asian financial crisis and uncertainties related to domestic developments. At the end of January 1999, the exchange rate of Rupee vis-a-vis. US \$ was Rs. 42.50, recording a cumulative depreciation of about 7.1% from the end-March 1998 level of Rs. 39.50. Presently, the Rupee is hovering between Rs. 42 and Rs. 43 vis-a-vis US \$.

42. Currency

The central unit of Indian currency system is the rupee, which exists both in the form of a coin as well as a currency note. There are currency notes of higher denomination, viz., Rs. 2, Rs. 5, Rs. 10, Rs. 20, Rs. 50, Rs. 100 and Rs. 500, in circulation. Prior to January 1957, the subsidiary coins existed in the form of eight annas (half-a-rupee), four annas (quarter of a rupee), two annas (eighth of a rupee), one anna (sixteenth of a rupee), two paise (half anna) and one paisa (quarter of one anna) coins. The pie (one-third of a paisa) was also there in name, but was practically extinct. These were the traditional subsidiary coins.

Decimal Currency System: With the Indian Coinage (Amendment) Act 1955 which came into force from April 1, 1957, Indian currency system was converted into a decimal system. With this, a new set of subsidiary coins was introduced and

the rupee became equal to 100 paise (originally the nomenclature was naya paise, which was later changed to paisa). The first one paisa coin under the decimal system was issued in March 1962 and the first one rupee coin under this system issued in July 1962. The range of subsidiary coins under the new system comprised one paisa, two paise, five paise, ten paise, twenty-five paise and fifty paise. Between 1957 and 1964, both the traditional and the new subsidiary coins were in circulation, but since 1964, it is only the decimal coins, which form a part of the currency system. A three paise coin was introduced in 1965 and a twenty paise coin introduced a little later. The smaller coins are now out of use. Coins of two rupee and five rupee denomination have also now been introduced. Now, the Indian currency system has been completely decimalised.

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Bank of Maharashtra
Canara Bank
Central Bank of India
Corporation Bank
Dena Bank
Indian Bank
Indian Overseas Bank
Oriental Bank of Commerce
Punjab National Bank
Punjab and Sind Bank
State Bank of India and its subsidiary banks
Syndicate Bank
UCO Bank
Union Bank of India
United Bank of India
Vijaya Bank

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Besides these public sector banks which control over 90 per cent of the banking activity in the country, there are non-nationalised scheduled banks and non-scheduled banks. A bank which has capital and reserves of over Rs. 5 lakh is called a scheduled bank and those which have capital and reserves lesser than this limit prescribed by the RBI Act, are categorised as non-scheduled banks.

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Of the scheduled commercial banks, 223 are in the public sector and these account for about 85 per cent of commercial banking system. Within the public sector banking system, 196 banks are regional rural banks and 27 banks are regular commercial banks and they transact all types of commercial banking business. Subsequent to the issue of guidelines in January 1993 for the entry of new private sector banks the RBI granted approval for the setting up of 13 new privately owned domestic banks. Out of these 10 have already started functioning. These include UTI Bank Ltd. (Registered Office : Ahmedabad); IndusInd Bank Ltd. (Pune); ICICI Bank Ltd. (Baroda); Global Trust Bank Ltd. (Secunderabad); HDFC Ltd. (Mumbai); Centurion Bank Ltd. (Panaji); Bank of Punjab Ltd. (Chandigarh); Times Bank Ltd. (Faridabad); IDBI Bank Ltd. (Indore) and Development Credit Bank Ltd. (Mumbai).

Number of Bank Offices/Branches: In the early years of independence, the number of bank offices was very small. For example, in June 1951, the number of bank offices (both scheduled and non-scheduled banks) was only 5,115. The number of offices increased to 6,168 in June 1961 and even prior to nationalisation, the number stood at 8,262 in June 1969. However, after the nationalisation of major banks in July 1969, the process of expansion gathered momentum. At the end of March 1996, there were over 62,849 bank offices in India which includes offices of the foreign banks in India. The major thrust in branch expansion in the country has come only from the public sector banks. Meanwhile, the RBI has liberalised its branch licensing policy and given full freedom to nationalised banks in opening new branches.

Bank Deposits : After the nationalisation of major commercial banks in the country, there has been marked expansion in their business, both with regard to the bank deposits as well as the bank credit. In March 1969, the total deposits of the scheduled commercial banks stood at Rs. 4,384 crore, which increased to Rs. 5,609 crore in March 1971. Starting from this low base, the

growth of bank deposits has indeed been phenomenal, between 1971 and 1981, deposits grew almost seven-fold, and again doubled during the next five years to a figure of Rs. 72,224 crore in March 1985. There was a further quantum jump as the bank deposits rose to Rs. 1,47,854 crore at the end of June 1989. By the end of March 1994, these increased to Rs. 2,80,908 crore. During 1996-97, the increase in aggregate deposits, upto December 24, 1996 was Rs. 39,967 crores (8.5%) as compared with Rs. 16,049 crores (4.1%) in corresponding period of 1995-96. The total deposits at the end of June 1998 (excluding interbank deposits) stood at Rs. 4,80,714 crore.

Bank Credit : The banking sector has been keeping steady pace with the increased requirements of the economy. In March, 1969, the bank credit amounted to only Rs. 3,464 crore, which increased to Rs. 4,684 crore in March 1971. There was a six-fold increase in bank credit between 1971 and 1981. Between 1981 and 1985, there was a two-fold expansion in bank credit. Upto March, 1994, credit extended by the commercial banks stood at Rs. 1,33,314 crore. During 1996-97 the increase in non-food bank credit upto December 20, 1996, was Rs. 6,169 crores (2.5%) in contrast to a rise of Rs. 21,806 crores (10.9%) in the previous year. At end December 1997, the total credit extended by banks was Rs. 125,828 crore.

REGIONAL RURAL BANKS (RRBs)

With a view to improving the flow of credit to the rural sector of the economy, a number of Regional Rural Banks have been set up in the areas where commercial and cooperative banking facilities have been lacking. These banks cater to the credit requirements of the weaker sections, small and marginal farmers, landless labourers, village artisans and petty businessmen in the rural areas. In all, there are 196 regional rural banks with their 14,475 branches, covering 427 districts in 23 States with a mobilised deposit to the tune of Rs. 22,198 crore and the credit support provided by these banks amounted to Rs. 9,876 crores at the end of March, 1998.

NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT (NABARD)

In the field of rural credit and agricultural development, establishment of NABARD is a major event. The National Bank of Agriculture and Rural Development was established on 12th July 1982 as an apex body with the responsibility for overall development, policy, planning and financial support for agriculture and rural development. The NABARD provides credit to rural sector through cooperative banks, commercial banks, regional, rural banks and other financial institutions set up to finance rural development. The bank ensures co-ordination in operations of various institutions engaged in the field of rural credit. During 1997-98 (July-March) NABARD sanctioned short term credit limits aggregating to Rs. 5,169 crores to the State Cooperative Banks.

EXPORT-IMPORT BANK OF INDIA

Recognising the importance of exports in India's development programmes, the Government of India set up the Export-Import Bank of India in January 1982 as a statutory corporation wholly owned by the Union Government. The main objectives of the Export-Import Bank (EXIM Bank) are to ensure an integrated and co-ordinated approach to solving the problems of exporters; providing special attention to capital goods export and export of technical services; and to tap domestic and overseas markets for resources, undertaking development and financing activities in the areas of exports.

The EXIM Bank provides financial assistance to the exporters and importers and acts as the principal financial institution for co-ordinating the working of other institutions engaged in financing exports and imports. It also provides refinance facilities to commercial banks and financial institutions against their export-import financing activities.

During 1997-98, the Bank sanctioned loans worth Rs. 1840 crores as against, Rs. 1242 crores in the previous year. While disbursement increased by 9 per cent to Rs. 1370 crores against 1996-97 (Rs. 1257 crores).

44. Reserve Bank of India

The Reserve Bank of India, which is the central bank of this country, was established on April 1, 1935. It was originally started as a shareholders'

bank with a share capital of Rs. 5 crore divided into shares of Rs. 100 each fully paid-up. But since January 1949 the Reserve Bank has

been nationalised and it is now a purely State concern. The Government of India holds the entire share capital of the Bank which has been acquired by payment of compensation to the shareholders.

Functions and Powers: The Reserve Bank of India, as the central bank of the country, performs the following functions:

1. It is the Bank of Issue: The bank has the sole right of issuing paper notes in India. Except one rupee notes and coins as well as subsidiary coins which are issued by the Ministry of Finance, Government of India, all other notes and coins are issued by the Reserve Bank. While issue of one rupee notes, coins and subsidiary coins is done by the Ministry of Finance, Government of India, the RBI undertakes their distribution on behalf of the Government.

2. It acts as Banker to the Government: It has been entrusted with the task of receiving all money on behalf of the Government as also with the task of making payments on their behalf. It performs these functions through the State Bank of India, which works as its agent at places where it has no office of its own. In addition, the Bank is the adviser to the Government on all financial matters.

3. It is Bankers' Bank: Being the apex bank it acts as the banker to other banks. All scheduled banks have to keep a certain percentage of their time and demand liabilities with the Reserve Bank. The scheduled banks have also to submit weekly returns of their business to the Reserve Bank.

4. It regulates the flow of credit: The RBI formulates and administers monetary policy and regulates the volume and flow of the credit created by the commercial banks. It operates general credit control measures through changing the bank rate or through open market operations. It also uses selective credit control measures to regulate the flow of credit in some specific lines of activity.

5. Supervisory Powers of the RBI: The RBI exercises supervisory powers over the commercial banks. Every bank has to get a licence from the RBI to do banking business in India, and this licence can be suspended or cancelled if the banks fail to fulfil certain stipulated conditions. For opening new branches, the banks have to seek permission of the RBI. The RBI has the power to inspect the banks and seek any information from them.

6. It maintains the external value of the rupee: Since March 1947, India is a member of the International Monetary Fund. It has, therefore, to maintain its rate of exchange at the level which it has declared to this fund. The Reserve Bank takes suitable measures to maintain the value of the rupee at this declared level.

Restriction on the Reserve Bank: As it is a central bank, certain restrictions have been imposed on the Reserve Bank. It is not to compete with the commercial banks. It is not allowed to pay interest on its deposits. It cannot engage directly or indirectly in trade. It cannot also acquire or advance loans against immovable property. It is also prohibited from purchasing its own shares or the shares of any other bank or any company or granting loans on such security.

45. Radio and Television

RADIO

Radio broadcasts started in India in 1927 with 10 privately owned transmitters at Mumbai and Calcutta. The Government of India took them over

in 1930 and started operating them under the name of Indian Broadcasting Service. In 1936, the name of the service was changed to All India Radio. Since 1957, it is known as Akashvani.

At the time of Independence in 1947, All India Radio's network consisted of six radio stations. Its network now comprises 185 broadcasting centres consisting of 177 full-fledged stations, four relay centres, one auxiliary centre and three exclusive Vividh Bharati Commercial centres.

AIR has played a vital role to bring an awareness in listening of Indian music—classical, light, folk, tribal and western music. AIR is broadcasting 40 percent of the total broadcast for music.

The AIR's external services broadcasts are meant to project a true and objective image of the country to listeners abroad and to explain the country's point of view on matters of national and international importance. These broadcasts also try to acquaint foreign listeners with the working of the democratic system in India and stimulate interest abroad in the rich heritage of our art, culture and traditions and to highlight the progress achieved in different spheres of life.

Vividh Bharati, which is a popular entertainment programme, is broadcast from 35 centres in India including four short wave transmitters at Mumbai, Delhi, Chennai and Guwahati. Commercial broadcasting centres are at Chandigarh, Kanpur and Vadodara and two studio centres at Bhubaneswar and Shantiniketan. The programmes are transmitted from 293 transmitters, of these 148 are medium wave, 51 short wave and 94 FM transmitters. The present national coverage is 90 per cent by area and 97.3 per cent by population. Commercial broadcasting on radio has become very popular in India. Introduced in November 1967 as an experimental measure, it is now carried by 30 centres. Advertisements and sponsored programmes are relayed through the commercial broadcasting service.

AIR has now been provided with Audio refurbishing facilities for old & degraded archival material on discs and tapes and their transfer into official discs for long term preservation have been provided under a UNDP assisted project. AIR network has now uplinking facilities from Delhi and State capitals. Interactive broadcasts like the phone-in-programme, Radio bridge and voice mail, apart from people's forum programme, are recent innovations in broadcasting. AIR is also now hooked to INTERNET for on-line information service. Six super power short wave transmitters of 500 KW each have been commissioned at Bangalore to strengthen the external services of All India Radio for covering Latin American and European countries.

Another important service of the AIR is Yuva an which gives programmes for the youth from 74 stations. This service provides a forum for the youth to present their viewpoint by participating in talks, discussions, interviews, plays, features and music. It is a service of the youth, by the youth and for the youth.

DOORDARSHAN

India's first television centre came into being on August 15, 1959 as a pilot project. It was a modest beginning of an hour twice a week experimental service organised as a part of All India Radio. It was in August 1965 that the first general service started from Delhi on a regular basis. Thereafter a number of television centres became operational from October 1972 onwards in quick succession. These were located at Mumbai, Srinagar, Jalandhar, Calcutta, Chennai and Lucknow. In 1976, television set up was delinked from the AIR and given a separate status and

name of 'Doordarshan'. The Asian Games in 1982 saw the next spurt when 20 low power transmitters were installed at different State capitals and important towns. August 15, 1982 saw another landmark in the history of Doordarshan when colour television was introduced in India. After INSAT-1A became operational, common national programmes were started for the entire network and Doordarshan utilised INSAT to extend its service to backward and remote rural areas. Now, Doordarshan has grown into one of the biggest television networks in the world. Through its 700 transmitters, television has brought within its reach an estimated 85 per cent of India's population.

National Programme: A common 'National Programme' is telecast from Delhi each evening which is carried by all transmitters in the country. The programme aims at fostering social, economic and cultural awareness, promoting the spirit of national integration, and projecting the progress made by the country in various fields. The items in the National Programme include art, music, dance and programmes based on literary works in various Indian languages, features and discussions on important events, programmes of entertainment, films and film based programmes and two news bulletins, one in Hindi and the other in English.

Commercial Programmes: Doordarshan introduced commercial programmes with the introduction of 'Spots' from January 1976. Now besides 'spots', sponsored programmes and family serials are being telecast.

Channel II: In September 1984, Channel II of Doordarshan was started in Delhi. Mumbai followed it in May 1985. Now Chennai and Calcutta also have a second channel. This channel known as DD2 metro entertainment channel has now been extended to many other cities and over 75 million people can receive programmes on this channel terrestrially. Channel II provides programmes for alternate viewing and primarily caters to the local viewing needs. The production of some programmes on this channel has been given to private companies.

Regional Language Channels: To provide additional software in the major languages of the country, Doordarshan started ten Regional Languages Satellite Channels. The programmes on these channels include the regional service, which is available terrestrially in the concerned state and additional programmes which could be received through the use of a dish antenna. As the foot prints of the INSAT Satellite cover the whole country, the regional language programmes

are now available for all people in the country, irrespective of their place of residence.

Other Channels: The Infotainment Channel, DD-3, is targeted to the small but important section of the audience which is interested in serious subjects like theatre, arts, literature, classical music, travel and in-depth analysis of news. This channel, introduced in 1995, is currently available terrestrially in three cities and also on a transponder on INSAT.

The film channel of Doordarshan, Movie Club, is the only free to air channel of Indian Films available in this region.

Doordarshan-India, the International channel, is in operation from 1995 and reaching about 50 countries in Asia, Africa and Europe and has plans to have a round-the-clock transmission reaching the entire world.

Doordarshan has entered into a special arrangement with the Cable News Network to have News and Current Affairs channel.

Meanwhile, after being kept in abeyance for seven years, the Prasar Bharti Act, 1996 giving autonomy to AIR & Doordarshan came into force on September 15, 1997 under the chairmanship of Shri Nikhil Chakravarty, the veteran journalist.

46. Films

Feature films found their place in India in 1912 when the first film *Pundalik* was made by R.G. Torney and N.G. Chitre. This was followed by *Raja Harishchandra* in 1913 by Dhundiraj Govind Phalke.

The era of talkie films began in 1931 when the first talkie film *Alam Ara* was produced by Ardeshir Irani.

India tops in the world in respect of production of feature films. Films can be publicly exhibited in India only after they have been certified by the Central Board of Film Certification. The Board examines films for certification in accordance with the provisions contained in the Cinematograph Act, 1952, Cinematograph (Certification) Rules, 1983 and the guidelines issued by the central government in this regard. The Film Certification Appellate Tribunal hears appeals against the decision of the Central Board of Film Certification.

National Film Development Corporation (NFDC) is the central agency to promote good cinema in the country. The aim of the corporation is to plan, promote and organise the integrated development of the country's film industry. Services provided by NFDC are (i) to give loans for production of feature films and documentaries, (ii) to finance cent percent projects to be directed by eminent personalities in the field, (iii) co-producing with Doordarshan, (iv) co-producing and co-financing films with renowned foreign film producers. It also exports Indian films and acts as a canalizing agency for import of foreign films. In 1997 Central Board of Film Certification certified 697 Indian and 191 foreign feature films. During the same period, the Board certified 272 foreign and 895 Indian short films, 722 Indian Video films and 329 foreign video films.

47. Newspapers

Indian press includes 41 centenarians. The Gujarati daily *Mumbai Samachar* published from Mumbai is the oldest existing newspaper. It came into being in 1822. At the end of 1997, the total number of newspaper and periodicals was 41,705 compared to 39,149 in 1996—an increase of 6.3 per cent. Among them, 4,719 were dailies, 325 tri/bi-weeklies, 14,743 weeklies and 21,918 other periodicals.

Newspapers are published from all the States and Union Territories. Uttar Pradesh claimed the top position with 7,449 newspapers followed by Delhi, Maharashtra and West Bengal. More than one thousand newspaper were also brought out

from Rajasthan, Madhya Pradesh, Tamil Nadu, Karnataka, Andhra Pradesh, Bihar and Kerala.

In the case of dailies also, Uttar Pradesh maintained its top position with 735 newspapers, followed by Bihar, Madhya Pradesh and Maharashtra and Tamil Nadu.

Newspapers were brought out in as many as 100 languages and dialects. Apart from the eighteen principal languages, and a few in foreign languages, the highest number of newspapers were published in Hindi (2,118) followed by Urdu (495) and English (338).

Table given on the next page shows the publication of newspapers language-wise at the end of 1997.

NUMBER OF NEWSPAPERS IN 1997 (Language and Periodicity)

Language	Dailies	Tri/ Bi-weeklies	Weeklies	Fort- nightlies	Monthlies	Quarterlies	Bi-monthlies/ Half-yearlies	Annals	Total
English	328	29	797	593	2,503	1,133	689	145	6,227
Hindi	2,118	124	8,500	2,621	2,796	510	167	28	16,864
Assamese	14	3	72	38	57	12	10	1	207
Bengali	93	12	562	448	636	421	147	14	2,333
Gujarati	99	8	473	149	433	56	41	13	1,272
Kannada	279	6	335	216	525	43	17	3	1,424
Kashmiri	0	0	1	0	0	0	0	0	1
Konkani	0	0	3	1	1	0	0	0	5
Malayalam	209	4	164	147	664	51	21	8	1,268
Maripuri	12	0	6	5	7	5	3	0	38
Marathi	283	19	773	157	434	97	36	97	1,896
Nepali	3	2	14	6	7	16	5	0	53
Oriya	63	2	122	78	250	84	22	4	625
Punjabi	104	15	324	80	224	31	17	1	796
Sanskrit	3	0	7	4	15	13	6	0	48
Sindhi	8	0	35	10	34	8	2	0	97
Tamil	341	42	389	211	662	27	19	7	1,698
Telugu	126	3	229	163	421	23	9	2	976
Urdu	495	20	1,253	348	485	51	15	3	2,670
Bilingual	63	19	515	291	1,048	311	131	31	2,409
Multilingual	15	4	90	60	189	63	26	8	455
Others	53	13	79	28	114	46	10	0	343
TOTAL	4,719	325	14,743	5,654	11,505	3,007	1,393	365	41,705

Total circulation of newspapers/periodicals as on 31 December 1997 was 10,57,08,197 copies as compared to 8,94,34,000 in 1996. According to 1993 circulation data available, 153 came in the category of big newspapers (having circulation of more than 75,000 copies), 421 in medium category (with a circulation between 25,001 and 75,000 copies) and 3,380 in small category (with a circulation up to 25,000 copies).

During 1997, The Hindustan Times, an English daily from Delhi, emerged as the largest circulated single edition daily with a circulation of 5,40,915 copies. The Times of India English daily from Mumbai came second (5,30,504) while the Anand Bazar Patrika, a Bengali daily from Calcutta came third (4,90,763). Roudramukhi Swar with 16 editions in Hindi with a circulation of 12,92,277 copies occupied first position among multi-edition dailies, while The Times of Hindi published with 7 editions in English with a circulation of 12,43,603 claimed

second position. However, Malayala Manorma weekly published from Kotayam was the largest circulated periodical with a circulation of 11,27,414 copies.

NEWS AGENCIES

There are four main news agencies; (1) Press Trust of India, (2) United news of India, (3) Samachar Bharti and (4) Hindustan Samachar. These were merged to form 'Samachar' in 1976, but from April 14, 1978 these have started functioning as independent news agencies after Samachar was dismantled.

While the Press Trust of India and the United News of India supply news in English, the other two are operating through the medium of Hindi and other Indian languages. Since May 1982, the UNI has also launched a news service in Hindi under the credit line of UNIVARTA. Similarly, the PTI has started in early 1986 a Hindi language news service, called PTI BHASHA.

48. Miscellaneous Information

DANCES

There are two main branches of Indian dance, namely, classical and folk.

Classical dances are those which are based on ancient dance discipline and have rigid rules for presentation. The following are the leading classical dances:

Bharatanatyam has its origin in Tamil Nadu.

Kathakali is the dance-drama of Kerala.

Kathak is the principal classical dance of North India.

Kuchipudi is a dance-drama from Andhra Pradesh.

Manipuri is a delicate, lyrical style of dance from Manipur in the eastern region.

Mohini Attam is the classical dance form of Kerala.

Odissi is the dance from Orissa.

Chakkarkoothu is a dance form which is believed to have been introduced in Kerala.

Ottam Thullal is a solo dance from Kerala, known as poor man's Kathakali.

Yakshagana is a dance drama from Karnataka which is of rural origin.

Folk dances, which are also called tribal dances, are of various patterns namely:

Dance	State
Ankia Nat	Assam
Bahaka Wata	Orissa
Bhangra	Punjab
Bhaval	Gujarat, Rajasthan
Bidesia	Bihar
Bihu	Assam
Chakkarkoothu	Kerala
Chakri	Jammu and Kashmir
Chamar Ginad	Rajasthan
Chappeli	Uttar Pradesh
Chhau	West Bengal
Chavittu Natakam	Kerala
Chiraw	
(bamboo dance)	Mizoram
Dahikala	Maharashtra
Dandanata	Orissa
Dandiya Ras	Gujarat
Gangore	Rajasthan
Garba	Gujarat
Gidda	Punjab
Gidda Parhaun	Himachal Pradesh
Hikri	Jammu and Kashmir
Jata-Jatin	Bihar
Jatra	West Bengal

Dance	State
Jhulan Leela	Rajasthan
Kaikotti Kalli	Kerala
Kummi	Tamil Nadu
Kajri	Uttar Pradesh
Kayanga	Himachal Pradesh
Karan	Uttar Pradesh
Kathi	West Bengal
Kayanga Bajavanga	Rajasthan
Khayal	Rajasthan
Kolattam	Tamil Nadu
Koodiyattam	Kerala
Kottam	Andhra Pradesh
Krishnavattam	Kerala
Kumaon	Uttar Pradesh
Lai Haroba	Manipur
Lavan	Maharashtra
Lezim	Maharashtra
Lota	Madhya Pradesh
Luddi	Himachal Pradesh
Macha	Madhya Pradesh
Maha Rassa	Manipur
Mudivettu	Kerala
Munzra	Himachal Pradesh
Nautanki	Uttar Pradesh
Ojapali	Assam
Pandvani	Madhya Pradesh
Rasila	Gujarat
Rauf	Jammu and Kashmir
Swang	Haryana
Tamasha	Maharashtra
Tappatri Kali	Kerala
Therukkoothu	Tamil Nadu
Theyyam	Kerala
Tippani	Gujarat
Veethi Bhagavatam	Andhra Pradesh

SPORTS INSTITUTES

Netaji Subhash National Institute of Sports,
Patiala
Lakshmi Bai National College of Physical
Education, Gwalior

PIN CODE ZONES

There are thousands of post offices in our vast country. Besides, we have a number of languages and scripts with the result that it is very difficult for the postal people to make out the addresses on letters and other articles of mail. To facilitate

sorting and speeding the mail, each delivery head and sub-post office in the country has been allotted a Postal Index Number (PIN). The system called the PIN code, divides India into eight Postal Index zones. Each zone is sub-divided into postal circles. The Postal Index Number consists of six digits. Each digit has a meaning and serves a specific purpose. The extreme left first digit represents the zone in the country, the second and third represent the sub-zone and the manner of routing the mail. The first three digits together indicate the sorting district. The right three digits of the PIN code pinpoint a post office of delivery within a sorting district. All the six digits together identify an individual post office or a delivery unit.

The following are the zones and their jurisdiction:

Zone No. 1 : Comprises Delhi, Haryana, Punjab, Chandigarh, Himachal Pradesh and Jammu & Kashmir.

Zone No. 2 : Comprises Uttar Pradesh.

Zone No. 3 : Comprises Rajasthan, Gujarat, Daman & Diu and Dadra & Nagar Haveli.

Zone No. 4 : Comprises Maharashtra, Goa and Madhya Pradesh.

Zone No. 5 : Comprises Andhra Pradesh and Karnataka.

Zone No. 6 : Comprises Tamil Nadu, Kerala and Lakshadweep.

Zone No. 7 : Comprises West Bengal, Andaman and Nicobar Islands, Orissa, Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Tripura.

Zone No. 8 : Comprises Bihar.

The following are the PIN codes of some important towns:

Calcutta GPO	700001
Mumbai GPO	400001
Hyderabad GPO	500001
Ahmedabad GPO	380001
Chennai GPO	600001
Bangalore City	560002
Kanpur HO	208001
Jaipur GPO	302001
New Delhi HO	110001
Delhi GPO	110006
Amritsar HO	143001
Sindri	828122

49. Some Important Facts About India

Aircrafts — *First indigenous* : HT-2, designed by Hindustan Aeronautics Limited, Bangalore.

First trisonic : "Mikoyan MiG-25".

First indigenous supersonic fighter : HF-25 MK1 (Marut).

Airfield — *Highest* : Daulatbeg Oldhi in Ladakh (5,182.93 m [17,000 ft]).

Airport — *Highest* : Leh airport in Ladakh (3,256 m [10,680 ft] high).

Busiest : Mumbai airport [Sahar (International) and Santa Cruz (Domestic)].

Atomic Station — *First* : Tarapore Power Station near Mumbai.

Auditorium — *Largest* : Sri Shanmukhananda Hall, Mumbai.

Awards — *Highest* : Bharat Ratna
Highest award for gallantry : Param Vir Chakra.

Banks

First : Bank of Hindustan.

First indigenous : Punjab National Bank.

Largest public sector bank : State Bank of India.

Bank with most foreign branches : State Bank of India.

First foreign bank in India : Chartered Bank.

Barrage — *Largest* : Farakka Barrage on the Ganga (2,245 m [7,363.6 ft] long).

Battleground — *Highest* : Siachen Glacier.

Beach — *Longest* : Marina Beach at Chennai.

Botanical Garden — *Oldest* : Farahat Baksh Botanical Garden at Saharanpur (U.P.).

Largest : National Botanical Gardens (originally Royal Botanical Gardens) in Calcutta.

Bridges — *First iron bridge* : "Lohe ka pul" over the river Gomti (built in 1815).

Longest river bridge : Mahatma Gandhi Setu over the Ganga at Patna (5,575 m [18,286 ft] long).

Highest motorable road bridge : At Khardungla in Ladakh (At a height of 5,602 m [18,380 ft]).

Busiest bridge : Howrah Bridge in Calcutta.

Widest bridge : Bridge across Yamuna river in Delhi (552.5 m [1,810 ft] long with 12 spans of 46.2 m [151.5 ft] length, divided into two streams).

Longest sea bridge : Anna Indira Gandhi bridge connecting the Island of Rameswaram with Mandapam in Tamil Nadu (2.34 km long).

Biggest cantilever bridge : Rabindra Setu (also called Howrah Bridge) spanning Hooghly river in Calcutta (457 m [1,499 ft]).

Longest cable stayed bridge : Vidyasagar Setu (second Howrah Bridge) in Calcutta.

Building — *Largest Residential* : Rashtrapati Bhawan, New Delhi.

Oldest : Stupa at Piprachiva in Bihar.

Canal — *Longest* : Indira Gandhi canal or Rajasthan canal (959 km long).

Cave — *Largest* : Aramath (about 44 km from Pahalgam in Jammu & Kashmir)

Cave Temple — *Largest* : Ellora (Maharashtra).

Chimney — *Tallest* : 277.5 (910.2 ft) high chimney at Talcher (Orissa).

Church — *Oldest in existence* : St. Thomas Church at Palayur in Trichur district (Kerala), built in 52 AD.

Largest : Se Cathedral at Old Goa, 10 km off Panaji.

Cinema Theatre — *Largest* : "Thangam" in Chennai (Tamil Nadu).

City — *Most populous* : Mumbai.

Colleges — *First* : Fort William College, Calcutta.

First women's : Bethune College, Calcutta.

First medical college : Medical College, Bengal (now Calcutta Medical College), founded by Lord William Bentinck on January 28, 1835.

First engineering college : Thompson College, Roorkee.

Corridor — *Longest* : Corridor in the Ramanathaswamy temple at Rameswaram, Tamil Nadu (1,220 m [4,002 ft]). Also known as corridor with a thousand pillars.

Crater — *Largest* : Lonar meteorite crater in Vidharba region of Maharashtra.

Dam — *Oldest* : Kallanai, dam on Kaveri river, 24 km from Tiruchirappalli in Tamil Nadu.

Highest : Shakra Dam on Sutlej river in Punjab (226 m [733 ft] high and 518 m [1,699 ft] long).

Longest : Hirakud Dam on Mahanadi river in Orissa.

Largest concrete : Nagarjuna Sagar dam over Krishna river at Nacherla (A.P.).

Strongest : Highest dam : Shakra Dam

Delta—Largest : Sunderbans (75,000 sq km formed by Ganga and Brahmaputra in West Bengal and Bangladesh).

Desert—Largest : Thar (Rajasthan).

Dome—Largest : Gol Gumbaz, Bijapur (Karnataka).

Dynasty—Earliest : Sisunaga, founder of Sisunaga dynasty, reigned over Magadha with Rajgir as his capital in 642 BC.

Elections—First General Elections : In 1952.

Highest victory margin : P. V. Narasimha Rao defeated Bangaru Laxman with a margin of 5,80,297 votes.

Most wins from same constituency : B. Shankaranand (seven consecutive wins without changing his constituency, Chikkodi reserved constituency in Belgaum district).

Highest polling booth : Hikim, located in the tribal Lahaul valley in Himachal Pradesh (altitude 5,000 ft).

Longest tenure as MP from same constituency: Late Babu Jagjivan Ram from Sasaram in Bihar in eight Lok Sabha elections.

First use of indelible ink : Third Lok Sabha elections in 1962.

Exhibition Ground—Largest : Pragati Maidan complex, New Delhi.

Fertiliser —Largest producer : Indian Farmers Fertiliser Corporation Limited.

Highest consumption : Uttar Pradesh.

Films—First colour film : "Can-Can Dance".

First narrative feature film : "Pundalik" made by G. Torney and N. G. Chitra.

First indigenous feature film: "Raja Harishchandra", Dada Saheb Phalke's silent feature film.

First talkie film : "Alam Ara" by Ardeshir Irani.

First golden jubilee film : "Sant Tuka Ram" in Marathi.

First animated film : R. C. Bora's "On A Moonlit Night".

First Sanskrit film : "Shankaracharya".

First Hollywood film dubbed in Hindi : "Jurassic Park".

First child star : Bhalchandra (son of Dada Saheb Phalke).

First female child star : Mandakini (daughter of Dada Saheb Phalke).

Fort—Oldest : Kalinjar Fort in Madhya Pradesh.

Fruit Production—Largest producing State : Uttar Pradesh (area 86,633 ha).

Biggest fruit market : New Subzimandi, Azadpur, Delhi (Asia's largest fruit and vegetable market).

Gateway—Highest : Buland Darwaza at Fatehpur Sikri near Agra (53.5 m [175 ft] high built by Akbar).

Glacier—Longest : Siachen Glacier on Indo-Pakistan border (75.6 km long and 2-8 km broad).

Gurdwara —Largest : Golden Temple at Amritsar (Punjab) (built in 1577 by Guru Ram Das, the fourth Sikh Guru and completed by Guru Arjan Dev, his successor).

Gypsum—Largest deposits : Rajasthan.

Hospital—First : At Fort St. George in Chennai.

Largest : B. J. Medical Hospital, Ahmedabad.

First eye hospital : Chennai Eye Hospital (Regional Institute of Ophthalmology, Government Ophthalmic Hospital, Chennai).

First all-woman hospital : Musalim Maternity and Zenana Hospital, Hyderabad (A.P.).

Largest cardiac hospital : Escorts Heart Institute, New Delhi.

Hydel Power Station —Highest : Rongtong Hydel Project in Kinnaur district of H.P.

Lake —Largest : Wular Lake, Kashmir.

Largest freshwater : Kolteru in A.P. (900 sq km).

Library—First : William Carey Library at Serampore in 1800.

Largest : National Library, Calcutta.

Milk and Milk Products—Biggest milk plant : Mother Dairy in Delhi (processing capacity 6,50,000 litres per day).

First milk powder plant (from buffalo) : Kaira District Cooperative Milk Producers Union, Anand (Gujarat).

Butter—Largest selling brand : 'Amul'.

Baby food—Largest selling : 'Amul Spray'.

Minaret—Tallest medieval : Qutub Minar in Delhi (73 m [239 ft]).

Missiles—First tactical surface-to-surface missile : "Prithvi".

First short range surface-to-air missile : "Trishul".

First intermediate range ballistic missile : "Agni".

First long range multiple target : "Akash".

Monastery—Highest : The key monastery in Spiti (Himachal Pradesh) at an altitude of 14,000 ft.

K-490/208

Oldest : Buddhist monastery, situated at an altitude of 3,048 m (10,000 ft) at Tawang in Arunachal Pradesh.

Mosque — **Largest** : Jama Masjid, Delhi (built by Shah Jahan in 1644-58).

Mountain peak — **Highest** : Kanchenjunga.

Museum — **Largest** : Indian Museum, Calcutta.

National Anthem

First sung : On December 27, 1911 at Calcutta session of Indian National Congress.

National Flag — **First hoisted** : At Green Park, Calcutta, on August 7, 1906 by Surendranath Banerji.

Naval Ships — **First missile boat** : INS 'Vinash'.

First frigate : INS 'Khukri'.

First tanker : INS 'Shakti'.

First indigenous patrol boat : INS 'Ajay'.

First frigate with modern guided missiles : INS 'Godavari'.

Largest landing ship : INS 'Magar'.

First aircraft carrier : INS 'Vikrant'.

Largest aircraft carrier : INS 'Viraat'.

Newspaper — **First** : Hickey's "Bengal Gazette" or the "Calcutta General Advertiser" published from Calcutta in 1780.

First vernacular paper : "Samachar Darpan" (in Bengali from Serampore on May 31, 1818).

Oldest daily : "Mumbai Samachar" (launched by Fardoonji Murzban on July 1, 1822).

Oldest English daily : "The Times of India" (started in 1838 from Mumbai).

Most editions of a daily : "The Indian Express" published from 16 centres.

Highest selling daily : "Malaya Manorama".

Largest circulation of a single edition daily : "Anand Bazar Patrika".

Nuclear Implosion — **First** : At Pokhran in Rajasthan (May 18, 1974).

Nuclear Reactor — **First** : "Apsara".

Observatory — **Oldest** : Jantar Mantar, New Delhi (built by Maharaja Jai Singh II of Jaipur in 1725).

Palaces — **With thousand doors** : Hazar Duan, palace of Nawab Nazim Humayun Khan of Murshidabad (West Bengal).

Only palace facade : Hawa Mahal (palace of winds), Jaipur (Rajasthan).

On Lake : Lake Palace, Udaipur (Rajasthan).

Planetarium — **Largest** : Birla Planetarium, Calcutta.

Plateau — **Largest** : Deccan Plateau.

Political Party — **Oldest** : Indian National Congress (founded by A. O. Hume in 1884 in Mumbai).

Most times Congress President : Jawaharlal Nehru

First Woman Congress President : Annie Besant

Post Office — **First GPO** : At Fort St. George Square, Chennai.

Largest : Mumbai GPO.

Post Office at highest altitude : Hikim located in Lahaul Spiti valley at an altitude of 15,000 ft.

First Post Office outside the country : At Dakshin Gangotri on Antarctica.

First stamp designer : Captain H. L. Thuillier, Deputy Surveyor General, Calcutta.

First State to issue a stamp : Kathiawar in Saurashtra (now Gujarat State).

First stamp honouring a national leader : Mahatma Gandhi on August 15, 1948.

First airmail : Allahabad to Naini on February 18, 1911.

President — **First presidential elections held** : In 1962. Dr. S. Radhakrishnan became the President of India.

Longest term : Dr. Rajendra Prasad (12 years, 2 months, 18 days).

Shortest term : Dr. Zakir Hussain (May 13, 1967 to May 3, 1969).

Oldest to assume office : R. Venkataraman (at the age of 76 years, 7 months, 21 days).

Youngest to assume office : N. Sanjiva Reddy (at the age of 64 years).

First to die in harness : Dr. Zakir Hussain (on May 3, 1969).

Prime Minister — **First appointed** : Jawaharlal Nehru

First woman Prime Minister : Indira Gandhi

Longest term : Jawaharlal Nehru (17 years)

Shortest term : Charan Singh (5 months, 16 days)

Oldest to assume office : Morarji Desai (at the age of 81)

Youngest to assume office : Rajiv Gandhi (at the age of 40)

First to lose election : Indira Gandhi (in 1977)

First to resign : Morarji Desai

First to die in harness : Jawaharlal Nehru

First to die in harness (abroad) : Bahadur Shastri (at Tashkent, in for

First to have been assassinated : Indira Gandhi

Prison — Largest : Tihar Central Jail, Delhi

Pyrite — Largest deposits : Rajasthan

Radio Station—Highest Location : The Leh (Ladakh) station of AIR (at an altitude of 3,231 m [10,697.68 ft] above sea level).

Railways—First railway company : East Indian Railway Company and Great Indian Peninsular Railway Company.

First train journey : Mumbai to Thane (a distance of 34 km) on April 16, 1853.

First railway terminus : Bori Bunder (V.T.), Mumbai.

First super fast train : Rajdhani Express between New Delhi and Howrah.

First double decker : Sinhaagadh Express between Mumbai V.T. and Pune.

Most tunnels on a route : Kalka-Shimla rail route (102 tunnels).

Longest railway bridge : Dehri-on-Sone railway bridge over Sone near Sasaram on Calcutta-Delhi main line.

Longest passenger train route : Jammu Tawi — Kanya Kumari (3,730 km).

Fastest train : Shatabdi Express between New Delhi and Bhopal at a speed of 140 kmph.

Longest platform : Kharagpur in West Bengal, 833 m (2,733 ft) long. Also world's longest.

Railway station at the highest altitude : Ghoom on Darjeeling-Himalayan Railway at a height of 2,258 m (7,408 ft).

First Metro : At Calcutta.

First electric train : In Mumbai between Mumbai T. and Kurla (in 1925).

First solar powered station : Yedakumeri (on Hasan-Mangal section).

Rainfall—Heaviest : Mawsynram (Meghalaya).

Refinery—Oldest : Digboi Refinery.

Largest : IOC Refinery at Koyah (Gujarat).

Religious Community—Largest religious community : Hindus (82.6 per cent of country's total population).

Largest minority community : Muslims (12.6 per cent of Indian communities).

Largest Tribe : Gond (in Madhya Pradesh and Maharashtra), followed by Bhils (in Rajasthan, Madhya Pradesh, Gujarat and Northern Maharashtra) and Santhal (in Bihar, West Bengal, Orissa and Tripura).

Scheduled Castes largest concentration : States—Uttar Pradesh; Union Territory—Pondicherry.

Scheduled Castes smallest concentration : Mizoram

Scheduled Tribes largest concentration : Madhya Pradesh.

Scheduled Tribes smallest concentration : Goa, Daman and Diu.

Largest Scheduled Caste Community : Chamar.

Smallest Scheduled Caste Community : Watal (Jammu & Kashmir).

Youngest religion : Sikhism.

River—Longest : Ganga (2,640 km long).

Road—Longest : Grand Trunk Road.

Highest : Road at Khardungla in the Leh-Manali sector.

Satellites—First : 'Aryabhata'.

First experimental geostationary communications satellite : 'APPLE' (Ariane Passenger Payload Experiment).

First satellite launch vehicle : 'SLV-3'.

First earth-cum-communication satellite : 'INSAT-1A'.

Satyagraha—First ever : By Mahatma Gandhi in 1917 in the Champaran district of Bihar.

Schools—Oldest : St. Mary's Church Charity School at Fort St. George's, Chennai.

Largest : South Point High School, Calcutta.

First for girls : Baptist Mission School at Gauribari, Calcutta.

First public school for girls : Maharani Gayatri Devi School, Jaipur.

State—Largest in area : Madhya Pradesh

Smallest in area : Goa

Most populated : Uttar Pradesh

Least populated : Sikkim.

Most densely populated : West Bengal

Least densely populated : Arunachal Pradesh

Most literate : Kerala.

Most literate (women) : Kerala.

Most women : Kerala.

Statue—Tallest : Statue of Jain saint Gomateswara at Sravanabelagola in Karnataka.

Stupa—Largest : Great stupa at Sanchi (M.P.).

Tanks—First Indian-made : 'Vijayanta'.

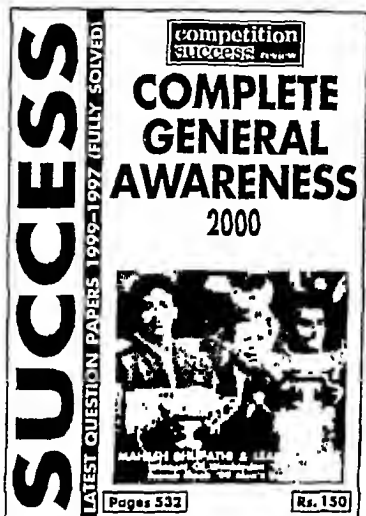
First indigenous MBT : 'Arjun'.

Telegraphs and Telephones

First telegraph line : From Calcutta to Diamond Harbour, a distance of 33.8 km in 1838 by William B. O'Shaughnessy, an Irish Professor at Calcutta Medical College.

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First telephone exchange : In Mumbai by Oriental Telephone Co. on January 30, 1882.

First automatic telephone exchange : At Shimla in 1914.

First telex exchange : At Mumbai and Ahmedabad in 1953.

First STD : Between Lucknow and Kanpur on November 26, 1960.

First ISD : Between Mumbai and London in 1976.

Telescope—Largest radio telescope : Giant Meterwave Radio Telescope at Khodad near Pune (Maharashtra).

Television—First telefilm : Satyajit Ray's "Sadgati" (April 13, 1987).

First TV serial : "Teesra Rastra" (May 2, 1962).

Longest TV serial : "Hum Log" (156 episodes).

First serialised animation film : "Ghayab Aya".

Maximum viewership of a serial : "Mahabharat".

First video file : "Teri Meri Kahani".

Tunnel—Largest : Jawahar Tunnel, Banihat Pass (Jammu & Kashmir).

Union Territory—Most literate : Lakshadweep.
Most literate (women) : Chandigarh.

University—Longest functioning university : Nalanda University in Bihar.

Oldest modern university : Calcutta University, followed by Mumbai University and Chennai University.

First Open university : Andhra Pradesh Open University.

Largest Open university : Indira Gandhi Open University, New Delhi.

First Law University : National Law School of India, Bangalore.

First women's university : Indian Women's University, Pune (founded by D. K. Karve).

Vice-President

First elected : Dr. S. Radhakrishnan

Longest term : Dr. S. Radhakrishnan (10 years)

Oldest to assume office : R. Venkataraman (at 73 years)

Shortest tenure : V. V. Giri (2 years).

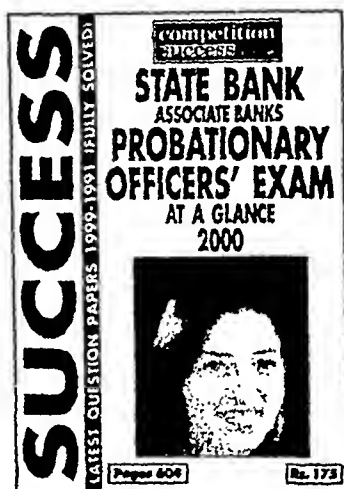
Wall—Longest : The 38.5 km long fortification built by Rana Kumbha to prevent the invasion of Mewar.

Waterfall —Highest : Jog Waterfall, Karnataka. (It is a combined name of four separate falls known as 'Raja', 'Rani', 'Rocket' and 'Roarer').

Zoo—Largest : Zoological Gardens, Calcutta. □

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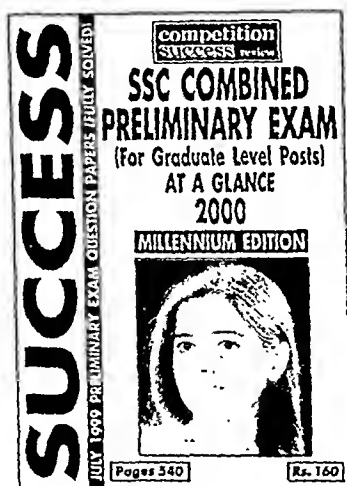
Part XI

Who's Who

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1. Persons : Past

Abdullah, Sheikh Mohammad (1906-1982): Founder of National Conference and Chief Minister of Jammu and Kashmir. Popularly known as *Sher-e-Kashmir* (Lion of Kashmir).

Abiden, Zain-ul (15th c. AD): A benevolent and enlightened ruler of Kashmir; preceded Akbar in abolishing *Jaziya*, granting absolute religious freedom to all sects in his kingdom.

Acharya, Nirmalya (1936-1995): Bengali writer-editor. Joint-editor of *Ekshan* along with Soumitra Chatterjee. Editor of the works of Nati Binodini, Manik Bandyopadhyay, Krishna Bhattacharya, and Satinath Bhaduri. Founder of Satyajit Ray Memorial at Nandan.

Adiseshiah, Malcolm (1910-1994): Indian educationist and economist. Vice-Chancellor of Madras University. Deputy Director General of UNESCO. Recipient of Padma Bhushan, 1976.

Adler, Alfred (1870-1937): Viennese psychologist, and original thinker of the trait of inferiority complex.

Aeschylus (525-456 BC): Greek poet, and Father of Greek Tragic Drama. Among his famous works are *Prometheus Bound*, *The Seven against Thebes*, *Orestes* (comprises *Agamemnon*), and *Suppliants*.

Aesop (620-544 BC): A Greek slave, who became a writer. Wrote beast fables like *The Fox and the Grapes*, *The Tortoise and the Hare*, etc., each with a moral.

Agarwal, Om (d. 1994): The first Asian and the only Indian to win the World amateur snooker championship. Recipient of Padma Shri in 1985, and also of Arjuna award the same year.

Akira Kurosawa: The celebrated Japanese film director, whose poetic vision, innovative style and stunning technical perfection made him Japan's greatest director, died at the age of 88, on September 6, 1998. His films—*The Seven Samurai*, *Rashomon* and *Kagemusha* were among the finest works of the world cinematographic heritage.

Alberuni (b. 973 AD): Iranian scholar and historian. Accompanied Mahmud of Ghazni during his invasion of India. Authored *Kitab-ul-Hind*, which gives an account of Indian philosophy and science in the 11th century.

Albuquerque, Altonso de (16 c. AD): Founder of Portuguese empire in the East. Conquered Goa from Sultan of Bijapur in 1510 and made it his capital.

Alexander the Great (356-323 BC): King of Macedonia. Conquered South-West Asia and Egypt

and founded Alexandria. Invaded India in 326 BC. After defeating King Porus and many others, advanced up to river Beas. Died during his return journey to Macedonia at Babylon.

All, Aruna Asaf (d. 1996): The veteran freedom fighter and social worker, who played a prominent role in the 1942 Quit India Movement, died at the age of 87. First woman Mayor of Delhi. Awarded Bharat Ratna posthumously in July 1997.

All, Salim (1896-1987): Indian ornithologist, known as "The Birdman of India". Contributed a lot to the study of Indian birds. Winner of several international and national honours, including Padma Vibhushan in 1976.

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Ampere, Andre Marie (1775-1836): French physicist and propounder of the theory that magnetism is the result of molecular electric currents (electro-dynamic theory). The unit of electric current, ampere, is named after him.

Amrohi, Kamal (d. 1993): Indian writer, producer and director. Brought a Mughal touch to Indian films. Joined the film industry in 1937 and spent over 50 years in the industry. Husband of late Meena Kumari, noted tragedienne of Indian screen.

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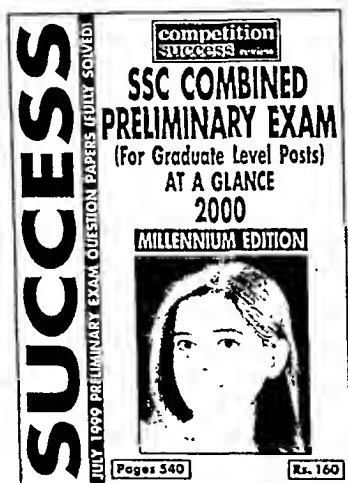
Andrews, C.F. (1871-1940): British missionary. Lived in India from 1904, devoted himself to India's struggle for freedom and worked with Indian leaders. Came to be known as "Deenabandhu".

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Antony, Mark (83-30 BC): A Roman general, he was a supporter of Julius Caesar and fought Brutus after Caesar's death. Felt in love with Cleopatra. Committed suicide.

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1. Persons : Past

Abdullah, Sheikh Mohammad (1906-1982): Founder of National Conference and Chief Minister of Jammu and Kashmir. Popularly known as *Sher-e-Kashmir* (Lion of Kashmir).

Abiden, Zain-ul (15th c. AD): A benevolent and enlightened ruler of Kashmir; preceded Akbar in abolishing *Jaziya*, granting absolute religious freedom to all sects in his kingdom.

Acharya, Nirmalya (1936-1995): Bengali writer-editor. Joint-editor of *Ekshan* along with Soumitra Chatterjee. Editor of the works of Nati Binodini, Manik Bhandopadhyay, Krishna Bhattacharya, and Satinath Bhaduri. Founder of Satyajit Ray Memorial at Nandan.

Adisesiah, Malcolm (1910-1994): Indian educationist and economist. Vice-Chancellor of Madras University. Deputy Director General of UNESCO. Recipient of Padma Bhushan, 1976.

Adler, Alfred (1870-1937): Viennese psychologist, and original thinker of the trait of inferiority complex.

Aeschylus (525-456 BC): Greek poet, and Father of Greek Tragic Drama. Among his famous works are *Prometheus Bound*, *The Seven against Thebes*, *Oresteia* (comprises *Agamemnon*), and *Suppliants*.

Aesop (620-544 BC): A Greek slave, who became a writer. Wrote beast fables like *The Fox and the Grapes*, *The Tortoise and the Hare*, etc., each with a moral.

Agarwal, Om (d. 1994): The first Asian and the only Indian to win the World amateur snooker championship. Recipient of Padma Shri in 1985, and also of Arjuna award the same year.

Akira Kurosawa: The celebrated Japanese film director, whose poetic vision, innovative style and stunning technical perfection made him Japan's greatest director, died at the age of 88, on September 6, 1998. His films—*The Seven Samurai*, *Rashomon* and *Kagemusha* were among the finest works of the world cinematographic heritage.

Alberuni (b. 973 AD): Iranian scholar and historian. Accompanied Mahmud of Ghazni during his invasion of India. Authored *Kitab-ul-Hind*, which gives an account of Indian philosophy and science in the 11th century.

Albuquerque, Alfonso de (16 c. AD): Founder of Portuguese empire in the East. Conquered Goa from Sultan of Bijapur in 1510 and made it his capital.

Alexander the Great (356-323 BC): King of Macedonia. Conquered South-West Asia and Egypt

and founded Alexandria. Invaded India in 326 BC. After defeating King Porus and many others, advanced up to river Beas. Died during his return journey to Macedonia at Babylon.

Ali, Aruna Asaf (d. 1996): The veteran freedom fighter and social worker, who played a prominent role in the 1942 Quit India Movement, died at the age of 87. First woman Mayor of Delhi. Awarded Bharat Ratna posthumously in July 1997.

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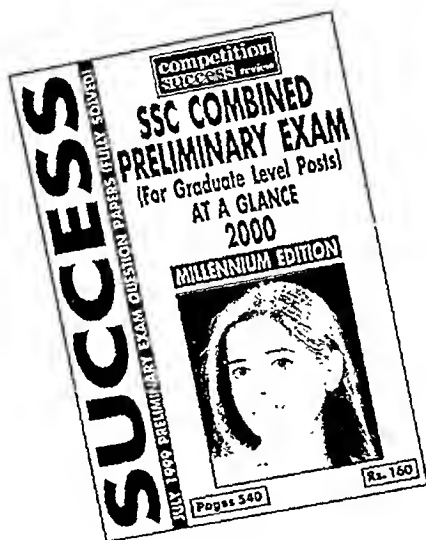
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Ali Talimeren, Dr : First Captain of independent India's Olympic football team. Died at the age of 82 in Kolkata on September 13, 1998.

Archimedes (287-212 BC) : Greek mathematician and scientist. Discovered the laws of floating bodies and Archimedes' Principle. Known for his doctrine of levers, conception of specific gravity, etc. Invented Archimedean screw. Killed by Romans during siege of Syracuse.

Aristotle (384-322 BC) : Greek philosopher and scientist. Founder of the science of logic or rules of reasoning. Established a school of philosophy at Athens. Was a disciple of Plato and teacher of Alexander, the Great. Author of *Poetics*, and *The Politics*.

Arnold, Thomas (1795-1842) : British educationist. Headmaster of Rugby. Creator of modern Public School system.

Aryabhatta (476-520 AD) : Indian astronomer and mathematician. Adorned the court of Chandragupta Vikramaditya. Credited with the invention of algebra. India's first satellite, Aryabhatta, named after him.

Ashapurna Devi (1909-1995) : Grand old lady of Bengali literature. First woman Jnanpith award winner (1976). Works include the trilogy *Prathama Pratishruti*, *Subamalata*, *Bakuler Katha*. Other works are *Balaygras*, *Joghivog*, *Sasibabur Sansar*, *Sagar Nijra*, *Patni-o-Preyashi*, *Thakurdar Kashijatra*, etc.

Ashe, Arthur (1944-1993) : The Davis Cup legend, first Black to win Wimbledon in 1975. Succumbed to AIDS.

Asoka (3rd c. BC) : Emperor of India. Believed in Dharma by love or faith rather than by force or war. Even after the victory in the Battle of Kalinga (261 BC), renounced war and embraced Buddhism. **Asvaghosh (2nd c. AD) :** Buddhist philosopher. Spiritual advisor of King Kanishka. Participated in the 4th Buddhist Council. Author of *Sariputra Karmam*.

Attlee, Clement Richard (1883-1967) : Labour Prime Minister of England, 1945-51. During his tenure of Prime Ministership, India won freedom in 1947. His works include *As it Happened*, *Empire into Commonwealth*.

Augustus, C.O. (63 BC-14 AD) : First Roman Emperor. Patronised art and literature. Writers like Horace and Virgil flourished during his time. Hence the period is named after him as "Augustan Age" in literature.

Austen, Jane (1775-1817) : The famous British novelist, she was the author of *Emma*, *Mansfield Park*, *Northanger Abbey*, *Persuasion*, *Pride and Prejudice* and *Sense and Sensibility*.

Azad, Chandra Sekhar (1906-1931) : Indian revolutionary leader. Was involved in the Non-

Cooperation Movement, Assembly bomb incident, Delhi conspiracy, Lahore conspiracy, Kakori conspiracy, etc.

Azad, Maulana Abul Kalam (1888-1958) : A nationalist Muslim scholar. President of Indian National Congress. Founded *Al Hilal* and *Al Balagh*, Urdu weeklies. Minister of Education and Arts in Interim Government. Free India's first Union Education Minister. Established UGC, IIT (Kharagpur), and many other institutions. Was posthumously conferred Bharat Ratna, 1992. Author of *India Wins Freedom*.

Bach, Johann S. (1685-1750) : German composer. Among his most famous compositions are the six *Brandenburg Concertos*. Also wrote concertos, suites, and many choral works, like *Mass in B Minor* and *St. Matthew Passion*. Four of his sons also became musicians.

Bacon, Francis (1561-1625) : British essayist and philosopher. Rejected Aristotelian deductive logic for inductive method. Author of *Novum Organum* and *Essays*.

Baden-Powell, Robert (1857-1941) : A soldier and defender of Mafeking in Boer War. Founded Boy Scouts in 1908 and Girl Guides in 1910. Has authored *Scouting for Boys*.

Bahadur Shah II : The last king of Mughal empire who took part in the First War of Indian Independence in 1857. Died in Rangoon during exile.

Bajaj, Jamnalal (1889-1942) : A close associate of Mahatma Gandhi. Was Congress treasurer. Founder of Satyagraha Ashram (at Wardha), Sasta Sahitya Mandal, Gau Seva Sangh, and Gandhi Seva Sangh. He gave Segaon village to Mahatma Gandhi, who renamed it as "Sevagram". The famous Jamnalal Bajaj awards in the field of rural development and constructive work are given every year in his memory.

Bajaj, Ramakrishna : The eminent industrialist, philanthropist and freedom fighter died on September 21, 1994 at the age of 71.

Balboa, Vasco Nunez de (1475-1517) : Spanish explorer. Discovered the Pacific Ocean in 1513 AD. **Banabhatta (7th c. AD) :** Sanskrit scholar. Court poet of Harshavardhana. Wrote *Kadambari* and *Harsha Charita*.

Bannerjee, Surendranath (1848-1925) : Indian patriot from Bengal. One of the first three candidates to pass the ICS examination. Founded Indian Association (1876). Created a national fund to make agitation against British rule more constructive. Held the presidency of Indian National Congress twice. Proprietor-editor of *Bengali*.

Bannerjee, Womesh Chandra (1844-1906) : First President of Indian National Congress, at its

rst session held in 1885 at Bombay. Migrated to England in 1902 and worked for the Indian cause from there. Financed a journal *India*.

Bardoloi, Gopinath : A freedom fighter and former Chief Minister of Assam who was posthumously honoured with Bharat Ratna in January 1999. He is the 11th posthumous awardee of Bharat Ratna.

Barnado, Thomas (1845-1905) : Philanthropist. Founder of homes for homeless children.

Basheer, Vaikom Mohammed (1908-1994) : Malayalam writer. Was nicknamed "Sultan of Beypore." His works include *Pathummayude Adu*, *Balyakalasakhi*, etc. Winner of Padma Shri.

Batuta, Ibn (14th c. AD) : South African scholar and traveller. Visited India in 1333, spent eight years in India and wrote about the reign of Muhammed Tughlaq.

Beethoven, Ludwig Van (1770-1827) : German composer and musician. Leader of romantic movement in music. Although stone deaf at the age of 40, he wrote many memorable symphonies (9), songs, sonatas and concertos.

Begin, Menachem (1913-1992) : Israeli politician and leader of the Likud bloc. Was Prime Minister from 1977 to 1983. Awarded Nobel Peace Prize, 1978.

Bell, Alexander Graham (1847-1922) : Edinburgh-born American citizen. Invented telephone in 1876. Devoted himself to the education of deaf-mutes.

Bentham, Jeremy (1748-1832) : Political philosopher and radical thinker. Champion of Utilitarian philosophy. Propounded the theory that aim of politics should be greatest happiness of greatest number.

Bentinck, William (19th c.) : Governor-General of India (1828 to 1835). Known for his social reforms such as outlawing of Sati, suppression of thugs and human sacrifice, etc. Spread English education in India and carried out many financial and administrative reforms of a lasting nature.

Benz, Karl (1844-1929) : German engineer. His motor car, produced in 1885, was one of the first to be driven by an internal combustion engine.

Bernier, Francois (18th-19th c.) : French traveller, served as physician to Aurangzeb during his long stay in India.

Besant, Annie (1846-1933) : An Irish by birth, became a staunch supporter of India's freedom movement. Founded Indian Boy Scouts' Association, Theosophical Society of India, and Home Rule League. First woman President of Indian National Congress (1917).

Bhabha, Homi J. (1909-1966) : Indian physicist. Father of Indian Nuclear Science. Responsible for

creating Bhabha Atomic Research Centre. Died in a plane crash.

Bharati, Subramania (1882-1921) : Indian poet, journalist, patriot and philosopher. Influenced Tamil literature greatly. The title 'Bharati' was conferred on him by the Raja of Ettayapuram (Tamil Nadu).

Bhaskara I (7th c. AD) : Indian astronomer. A contemporary of Brahmagupta, another Indian astronomer. India's second satellite for earth observation, *Bhaskara*, is named after him.

Bhaskaracharya II (12 c. A.D.) : Indian mathematician and astronomer. First to state that anything divided by zero is equal to infinity. Invented calculus long before Newton and Leibnitz. Author of *Sidhanta Shiromani*.

Bhatnagar, Shanti Swarup (1894-1955) : Indian scientist and science administrator. Responsible for the establishment of national science laboratories. Many science awards have been instituted in his name.

Bhave, Acharya Vinoba (1895-1982) : Sarvodaya leader. Known for Shramdan and Bhoodan Movements. Established Paramdham Ashram at Paunar. Winner of first Magsaysay award (1959). Posthumously awarded Bharat Ratna, 1983.

Bhutto, Z. A. (1928-1979) : Prime Minister of Pakistan. Was executed under the military dictatorship of General Zia-ul-Haq who had removed him from Prime Ministership in a military coup on July 4, 1977. Father of Benazir Bhutto, former Prime Minister of Pakistan. Signed Simla Agreement with Indira Gandhi in 1972.

Bismark, Otto von (1815-1898) : German statesman, known as "Iron Chancellor" for his *blood and iron policy*. Founder of German empire.

Bismil, Ramprasad (1897-1927) : Indian revolutionary. Leader of militant Hindustan Republican Association. Involved in Kakori train dacoity case (1925). Executed.

Boccaccio, Giovanni (1313-1375) : Italian writer and humanist, considered as 'Father of the Novel'. His well-known works are *Decameron* and *Life of Dante*.

Bolivar, Simon (1783-1830) : South American revolutionist, called the Liberator. He founded Grand Colombia (now Venezuela, Colombia, Panama, Ecuador). Revered as a Latin American hero.

Bonaparte, Napoleon (1769-1821) : French military leader. Nicknamed "Little Corporal". Emperor of France from 1804 to 1815. Victorious in battles against England, Russia and Austria, was finally defeated at Waterloo in 1815. Exiled to St. Helena where he died of stomach cancer.

Bose, J.C. (1858-1937) : Great Indian scientist. Independently of Marconi, did original work in wireless transmission. Also made a special study

of plant physiology and claimed that plants have life and soul. Founded Bose Research Institute, Calcutta. Invented crescograph. Author of *Response in the Living and Non-Living* and *Plant Response*.

Bose, Khudiram (1889-1908) : Indian revolutionary. Took part in looting of mailbags at Hatgachha and in bomb attack on Bengal Governor's special train in 1907. Organised a plot, in collaboration with Prafulla Chaki, and threw bomb at the carriage of Kingsford, the Sessions Judge at Muzaffarpur. Was hanged to death.

Bose, Nandalal (d. 1966) : Indian artist. Father of Modern Painting in India. Director of Kala Bhavan, Shantiniketan. Winner of Padma Bhushan.

Bose, Rashbehari (1886-1945) : Indian revolutionary leader. In 1912, planned the throwing of a bomb on Viceroy Lord Hardinge. Charged in Lahore Conspiracy Case for his plan to cut telegraph communications in North India. In 1916, married Tosiko Soma and became a Japanese citizen. Founder-President of Indian Independence League at Bangkok in 1942.

Bose, Satyendra Nath (1894-1974) : Indian physicist. Was Vice-Chancellor of Vishwabharati University, and President of National Institute of Sciences of India. Boson, an elementary particle, is named after him.

Bose, Subhas Chandra (1897-1945) : Great Indian national leader. President of Indian National Congress. Founder of Forward Bloc. During World War II, formed Azad Hind Fauj (Indian National Army) by recruiting Indian prisoners of war. Later, organised a freedom fight against the British with anese help. Fondly remembered as 'Netaji' for role. Was conferred Bharat Ratna posthumously in 1992 (withdrawn). His birth centenary was celebrated in 1997 on a grand scale.

Botvinnik, Mikhail M. (d. 1995) : Russian electrical engineer. Won Order of Lenin award. Was world chess champion. Applied scientific technique to the game of chess and devised new techniques.

Boyle, Robert (1627-1691) : Irish chemist. Gave the theory that all substances in the universe were made up of atoms. First to distinguish between a mixture and a compound. Introduced the law known as Boyle's Law.

Brahmachari, Dharendra (1924-1994) : A hillying Swami, dubbed as 'Resputin'. Shot into fame during the heydays of emergency in 1976. Died in a plane crash close to his Apama Ashram runway in Mantalai (Udhampur) in Jammu & Kashmir.

Brahmagupta (598-680 AD) : Indian mathematician. First to treat zero as a number. Author of *Brahma Siddhanta*.

Braille, Louis (1809-1852) : French educationist and teacher of blind. Himself a blind, he invented

the embossed dot system of reading and writing for the blind in 1829.

Brandt, Willy (1913-1992) : First Social Democrat Chancellor of West Germany. Won 1971 Nobel Peace Prize for his policy of "Ostpolitik", which helped East-West relations thaw during the Cold War.

Brezhnev, Leonid Ilyich (1906-1982) : Soviet President, commanded the loyalty and affection of millions for his soft approach in international affairs and his genuine concern for world peace.

Buck, Pearl S. (1892-1972) : American author on China and winner of 1938 Nobel Prize for Literature and 1932 Pulitzer Prize for *The Good Earth*. Her other works are *A House Divided*, *Imperial Woman*, etc.

Buddha, Gautama (563-483 BC) : Founder of Buddhism. Was born as a Kshatriya prince to Sudhodana, king of Kapilavastu, in Nepal. His birth place is stated to be Lumbini village. Renounced his royal heritage, and turned away from his wife and son to ponder on the problems of birth, death and disease. Attained enlightenment under a Bodhi tree at Bodhi Gaya in Bihar.

Burman, Rahuf Dev (d. 1994) : The noted music director, who composed over 400 songs for Hindi films, died in Mumbai on January 4, 1994 at the age of 54. Son of the legendary composer S.D. Burman, and husband of the renowned singer Asha Bhosle, he was known for his relatively light and "peppy" kind of music. He brought in the trend of using sounds that often made little meaning but gave a tilt to the tunes.

Byrd, Richard Evelyn (1888-1957) : American explorer and aviator. Was the first to fly over both North and South Poles. Led five expeditions to the Antarctic.

Caesar, Julius (101-44 BC) : Roman general, invaded Gaul and Britain, defeated Pompey in Civil War. Fell in love with Cleopatra, Queen of Egypt. In Rome, he was offered the crown and was later killed by his trusted friend, Brutus. Started the Julian calendar.

Cama, Bhikaji (1861-1936) : Indian revolutionary leader. First to unfurl the flag of Indian freedom at Stuttgart during Socialist Congress Session (1907). Founded Free India Society in England. Started a journal *Bande Mataram*.

Camus, Albert (1913-1960) : French writer and existentialist philosopher. Works include *Caligula*, *The Price of Justice*, etc. Won 1957 Nobel Prize for Literature.

Canning, Lord (19th c.) : The last Governor General of East India Company, 1856-58, and the first Viceroy of India (1858-1862). The Sepoy Mutiny of 1857 broke out during his tenure of office.

Carlepage, K.M. (1899-1993) : Grand old man of Indian Army and first Commander-in-Chief of Free India. Was Indian High Commissioner to Australia and New Zealand. Recipient of Legion of Merit of United States and Order of British Empire. Was known as Kipper.

Cave, Edward (1691-1754) : British publisher. Founder of the first modern magazine, *The Gentleman's Magazine*.

Caxton, William (1422-1491) : British writer and publisher. Set up the first English printing press at Westminster, London. The first book of the press was *Dictes and Sayings of the Philosophers* (1477). Among other books printed was *Le Morte d'Arthur*, authored by Thomas Malory.

Chaitanya (1445-1533) : Born at Nadia in Bengal, he was a pioneer of Brahma movement. Regarded as greatest among the Vaishnava saints, he was devoted to Lord Krishna and preached the doctrine of Love.

Chaitanya, Krishna (1918-1994) : Real name K.K. Nair. Indian socialist. Connoisseur of art and music. Authored many books, including *History of World Literature* (10 volumes).

Chakravarty, Nidhi : An eminent and fearless journalist, editor of *'Mainstream'* and Chairman of Fraser Bazaar Board—died on June 28, 1996 at the age of 34.

Chakraborty (Ch. a. 80) : Also known by the name Kaulitya. Prime Minister of Chandragupta Maurya. Author of *Artha Shashtra*, an authentic book on statecraft.

Chand Bibi (15th c.) : Daughter of the King of Ahmednagar. Was married to Ali Shan, King of Bijapur. Bravely fought against the soldiers of Aurangzeb, but lost her life in the battle.

Chand, Brijan (1905-1972) : Indian hockey wizard. Won Olympic golds in 1923, 1932 and 1936. Awarded Padma Bhushan in 1966.

Chandragupta 3 (Vikramaditya) (400 AD) : Emperor of Gupta Dynasty. During his reign Hinduism was rejuvenated, and art and literature flourished unobstructed. Fahan, the first Chinese pilgrim, visited India during his reign.

Chandrasekhar, Subramanyam (1910-1995) : Indian scientist, born at Lahore, but a citizen of America. Nephew of scientist C.V. Raman. Won 1983 Nobel Prize in Physics for his study of structure and evolution of stars. Propounded the theory that white dwarf stars cannot grow beyond a mass 1.4 times greater than that of Sun and must eventually collapse to enormous density. First to calculate the limits of the mass of star (1.4 times the Sun's mass), known as Chandrasekhar Limit. The famous 'Chandra' X-ray Observatory sent into space on board Space Shuttle Columbia is named after him.

Chaplin, Charlie (1897-1977) : British director, producer and film star. Won Lenin Peace Prize in 1954. Was conferred Academy Award (Oscar), in 1972, for his contribution to cinema. 'Signed' in 1975. His silent films include *The Tramp*, *The Kid*, *The Great Dictator*, *Limelight*, etc.

Charaka (2nd c. AD) : Indian physician. Acquired the court of Kanishka. Author of *Charakasamhita*.

Charlemagne (742-814 AD) : Founder of a new Roman Empire comprising Gaul, Italy and parts of Spain and Germany. Laid the foundation of Holy Roman Empire. His empire extended from Atlantic to Danube and Thor.

Chatterjee, Benind Chandra (1898-1954) : Indian poet, poet and novelist from Bengal. Composer of *Nanda Mazum* (*Arundhati*), the national song of India. Author of *Durgam Vardini*, *Kapala Kundala* and many other novels.

Chattopadhyay, Kamaladevi (1903-1992) : Indian social worker and patron of art and culture. Won Vaghsy award for community leadership in 1962.

Chattopadhyay, Sanku (a. 1965) : Indian poet and journalist. Known as Robert Frost of West Bengal. Served Arund Bazar Parity for 24 years. Winner of Santy Academy Award, 1963, for his collection of poems. *I can go out any street*.

Chatterji, Nand C. (The 101-year-old Indian celebrity author who became most famous for his work *The Autobiography of an Unknown Indian*, a memoir of his childhood in colonial India, died at his residence in Oxford, England on August 1, 1992. Among his better-known publications, besides the *Autobiography*, were *A Passage in England*, the *Confessions of Orca*, *Selection of Essays*, *Max Mueller Smolder Extraordinary*, *To Live or Not to Live*, *Hinduism*, *Try-hard*, *Great Arund and One of India*. He also authored a book in Bengali on the status of women in Bengali life.

Cheshire, Leonard (1918-1992) : A World War I hero, commanded the legendary "Dambuster" squadron, witnessed the bombing of Nagasaki, then set up a global network of homes for the disabled, known as "Cheshire Homes".

Chichester, Francis (1901-1973) : British aviator and geographer. Sailed around the world, single-handed in *Gipsy Moth IV* in 1966-67.

Chintamayandada, Swami (1918-1993) : Real name Beacristina Maron. Eminent of Bhagya Gita and Vedanta Philosophy. Founder of Chintay Mission.

Chishti, Moin-ud-din (9th c. AD) : Sufi saint, buried in Ajmer. The Urs is held there every year in his honour.

Chishti, Salim Shah (15th c. AD) : Sufi saint, passed Aizer with a son. Buried at Ferozpur Sik.

Chola, Rajaraja (985-1014 AD) : A mighty conqueror, revived the power of Cholas which had been shattered after the Battle of Takkolam. Made reforms in the system of local self-government. Built the Shiva temple of Thanjavur. His 1000th coronation anniversary was observed in 1984.

Chola, Rajendra (1018-1042 AD) : A king of the Chola Dynasty. Had a strong and efficient naval fleet as a result of which he added Ceylon, Andaman and Nicobar, etc. to the Chola empire.

Christ, Jesus (4 BC-33 AD) : Jewish religious leader, believed by the Christians to be the son of God. In his youth, gave up his job as a carpenter, and set out to preach and heal. Spread the message of brotherhood of man. Crucified by the Jews for blasphemy.

Churchill, Winston (1874-1965) : British statesman and author. Prime Minister during most of the Second World War (1940-45 and 1951-55). In 1953, was knighted and also awarded the Nobel Prize for Literature. His works include *The Second World War*, *The History of English Speaking Peoples*, and *The Gathering Storm*.

Cleopatra (69-30 BC) : Egyptian Queen. Fascinated Julius Caesar and accompanied him to Rome. Known for her romance with Antony dramatised by Shakespeare in *Antony and Cleopatra*. Committed suicide.

Clive, Robert (1725-1774) : A clerk in the East India Company. Fought the French in India and finally led the British army to many victories. After the Battle of Plassey in 1757, was made Governor of Bengal in 1765. Shot himself.

Columbus, Christopher (1451-1506) : Italian navigator. Begged the King and Queen of Spain for a ship to sail west to India. In 1492, discovered the route to America, Bahamas, Cuba and the West Indies islands. In 1498, landed in South America. In 1503, sailed to Central America.

Comte, Auguste (1798-1857) : French philosopher and founder of Positivism. Was a disciple of Saint Simon.

Confucius (551-479 BC) : Chinese philosopher. Founded the school of Confucianism. Taught kindness, love for others and reverence for ancestors. His lectures or teachings have been compiled as the *Analects* (or *Conversations*).

Cook, James (1728-1779) : British navigator. Made several voyages of discovery in the South Seas around Australia and New Zealand. Discovered Hawaiian Islands. Was killed by natives in Hawaii. His classic work is *Voyages Round the World*.

Cook, Thomas (1908-1982) : An English priest-turned-tour operator, better known as Father of Modern Tourism.

Copernicus, Nicolaus (1473-1543) : Polish astronomer. Founder of modern astronomy. Discovered that the earth is a planet revolving round the sun, with other planets, and that the earth was not the centre of the universe.

Corbusier, Le (1887-1965) : Swiss architect. Real name Charles Edouard Jeanneret. Planned the city of Chandigarh.

Cornwallis, Lord (1738-1805) : Governor General of India (1786-1793). Got Pitt's India Act, 1784, amended to have more power. Introduced permanent settlement for the zamindars and the ryots in Bengal in 1793.

Cromwell, Oliver (1599-1658) : British soldier-politician. Abolished Monarchy in England (1644). Established a Commonwealth in Britain and became its head as Lord Protector (1653).

Curie, Marie (1867-1934) : Polish physicist and chemist. Discovered radium, along with her husband, Prol. Pierre (1859-1906). Shared with her husband Nobel Prize in Physics in 1903. In 1911, was awarded Nobel Prize in Chemistry also.

Curzon, Lord (1859-1925) : British administrator and statesman. Viceroy of India (1899-1905). First partition of Bengal took place during his tenure.

Dahir (7th-8th c. AD) : Hindu Raja of Sind, repulsed the first attack of the Arabs on the Indian soil (712 AD). Was later defeated and killed.

Dalhousie, Lord (19th c.) : Governor-General of India (1848-1856). Introduced Doctrine of Lapse and added enormous territories to the British kingdom. This later led to the outbreak of Sepoy Mutiny. Introduced railways and telegraphs in India.

Damien, Joseph (1840-1889) : Belgian missionary. Worked for the leprosy-afflicted in Honolulu. Ultimately he himself succumbed to the disease.

Dandekar, V.M. (1920-1995) : Indian economist. Director of Gokhale Institute of Politics and Economics. Chairman of National Sample Survey Organisation. Founded Indian School of Political Economy in 1970. First to define poverty line in specific terms. Contributed to the cause of rural credit and land reforms. Author of *Poverty in India* and *The Indian Economy—Agriculture*.

Darwin, Charles Robert (1809-1882) : British naturalist scientist. After studying animal life in South Seas, wrote *The Origin of Species* on the theory of evolution. In *The Descent of Man*, he relates how man is descended from animal-like ancestors.

Das, Jatindra Nath (1904-1929) : Indian revolutionary. Manufactured bombs. Arrested in Lahore Conspiracy case. Went on a prolonged hunger strike in Lahore jail demanding better treatment for prisoners. Died in prison.

Dasgupta, Bimal (d. 1995) : Indian painter-artist. A founder-member of All India Fine Arts and Crafts Society, New Delhi.

Dass, Chittaranjan (1870-1925) : Indian freedom fighter. A famous lawyer defended and got Aurobindo Ghosh freed in Allpore Bomb Case. Founded Swaraj Party in 1923. Investigated into Jallianwala Bagh tragedy with Jawaharlal Nehru as Secretary. Known as "Deshbandhu".

Deodhar, Prof. D.B. (d. 1993) : The Grand Old Man of Indian Cricket died in Pune on August 24, 1993 at the age of 101.

Desai, Bhufabhai (1877-1946) : Indian national leader. An advocate by profession, defended Bardoli peasants before Broomfield Committee. Later, in 1945, defended INA prisoners also along with Pandit Nehru. Founded Swadeshi Sabha to boycott foreign goods. Negotiated Desai-Liaquat Pact (1944).

Desai, Mahadev (1892-1942) : Personal secretary of Mahatma Gandhi. Took active part in Indian Freedom Movement. Editor of *Independent* and *Navjivan*.

Desai, Morarji (1896-1995) : Noted Gandhian and freedom fighter. Deputy Prime Minister & Finance Minister under Congress rule. First non-Congress Prime Minister, during Janata regime in 1977. Recipient of Bharat Ratna, 1991, and also the title of *Nishan-e-Pakistan*, the highest civilian award of Pakistan. Author of *Nature Cure, Discourses on Gita* and *The Story of My Life*.

Desai, Ramakant : India's former test cricketer and fast bowler and ex-chairman of Selection Committee of BCCI. Died at the age of 58.

Descartes, Rene (1596-1650) : French philosopher and mathematician. Invented analytic geometry. Applied the techniques of mathematical reasoning to his philosophical thinking.

Dev, Narendra (1889-1956) : Indian educationist and socialist leader. Principal (*Acharya*) of Kashi Vidyapeeth. Vice-Chancellor of Lucknow and Banaras Universities. Founder-Chairman of Socialist Party (1948), which later merged with Kisan Mazdoor Praja Party to form Praja Socialist Party. Authored *Bhuddhadharma Darshan*.

Dhanvantari (400 AD) : Indian physician. Adorned the court of Chandragupta Vikramaditya.

Diana : British Princess Diana was killed in a car crash in Paris on August 31, 1997. Her companion Dodi-Al-Fayed, and their chauffeur were also killed in the accident. Diana and Charles, heirs to the British throne, separated in 1992 after 11 years of married life and were divorced later on.

Diaz, Bartholomew (1450-1500) : Portuguese navigator. First European to go round the Cape of Good Hope.

Dikshit, Genda Lal (1888-1920) : Indian revolutionary and freedom fighter. Organised Shivaji Society. Founded Matrivedi revolutionary organisation.

Disney, Walt (1901-1966) : American film producer and cartoonist. Creator of *Micky Mouse*, *Donald Duck* and many other cartoon films. In 1955, opened Disneyland, a vast amusement park, in California. His films include *Snow White and the Seven Dwarfs*, *Fantasia* and *Mary Poppins*.

Disraeli, Benjamin (1804-1881) : Englishman of Jewish parents. Was Prime Minister under Queen Victoria. Was a great orator and an opponent of Gladstone. Bought shares of Khedive (Egypt) and made Britain the controller of Suez Canal (1875).

Dorjee, Phu (1938-1987) : First Indian to climb Mount Everest without oxygen in 1984. Scaled Kanchenjunga, world's third highest peak. Scaled Mount Everest twice.

Douglas-Home, Alec (1903-1995) : British Prime Minister, 1963. Was the last of the old-style aristocrats to lead Britain's Conservative Party. As Foreign Secretary and Commonwealth Secretary, had spearheaded the move for the liberation of many British colonies.

Drake, Francis (1540-1596) : British seaman. Sailed round the world in 'Golden Hind' in 1577-80.

Dunant, Jean Henri (1828-1910) : Swiss philanthropist. Established Inter-national Red Cross in 1863, after the Battle of Solferino. Shared the first Nobel Peace Prize in 1901.

Dupleix, J. F. (1697-1763) : Governor-General of French possessions in India. Attempted to build an empire for France in India. Won the Second Carnatic War against the Britishers. He was, however, recalled to France in 1754.

Dwight, F. Davis (1879-1945) : American leader. Donated the trophy of International Lawn Tennis Championship for men, which is named after him as "Davis Cup".

Edison, Thomas Alva (1847-1931) : American inventor. Has more than 1,000 inventions to his credit, which include motion picture, gramophone, electric bulb, etc.

Eiffel, Alexandre Gustave (1832-1923) : French engineer, one of the first to employ compressed air caissons in bridge building. Among his works are Eiffel Tower and Panama Canal Locks.

Einstein, Albert (1879-1955) : Scientist of German-Swiss origin. Settled in U.S.A. after driven out by the Nazis from Germany in 1933. Developed theory of relativity in 1916 and authored *Theory of Relativity*. Awarded Nobel Prize in Physics (1921) for discovering the law of photoelectric effect.

Eisenhower, Dwight David (1890-1969) : American General turned statesman. Was

Commander-in-Chief of the Allied Forces in Europe from 1943 to 1945. President of United States (1952). Nicknamed "Ike". Known for Eisenhower Doctrine—a doctrine for the Middle East to ward off communism.

Elizabeth I, Queen (1533-1603) : Daughter of King Henry VIII, was Queen of England (1558-1603). Succeeded her sister Mary Tudor to the throne. Made England a great power. Shakespeare lived during her time, which is marked as "Elizabethan Age".

Epicurus (342-270 BC) : Greek philosopher. Founded the school of Epicurean philosophy. Advised self-negation, subdued life and practice of virtues. Propounded the cult of refined sensual pleasure.

Erikson, Erik (1903-1994) : Psychoanalyst. Applied Freudian theory to adolescence and adulthood. Coined the phrase "identity crisis".

Euclid (330-269 BC) : Greek mathematician. Founder of modern geometry. Discovered much of what today we know in geometry. Has compiled all his theorems in a series of books entitled *Elements*.

Euripides (480-406 BC) : Greek playwright. His plays are marked by tragic content and simple language. Works include *Alcestis*, *Medea*, *Hippolytus*, *Orestes* and *Electra* — characters drawn from Greek mythology and history. His *The Trojan Woman*, an anti-war play, was staged at the inaugural session of the League of Nations.

Fahlon (5th c. AD) : First Buddhist pilgrim from China to visit India. Came during the reign of Chandragupta Vikramaditya. Stayed in India from 401 to 410 AD.

Fateh Ali Khan, Ustad Nusrat : Hailed as "the living sensation of the subcontinent", the well-known Pakistani quawwali singer, stole the hearts of music lovers in India and Pakistan by his superb performance. Died in London on August 16, 1997.

Fazal, Abul (1561-1602) : Persian scholar. Was the Prime Minister of Akbar. Author of *Ain-i-Akbari* and *Akbarnama*.

Fellini, Federico (1920-1993) : Italian film maker, known for such classics as *La Strada*, *La Dolce Vita*, *8½* and *Ginger and Fred*. Five-film Academy Award winner, he has also been awarded a special Oscar for lifetime achievement.

Firaq Gorakhpuri, Raghupati Sahai (1896-1992) : Urdu poet. Works include *Andaza* (criticism, 1934), *Shola-o-Soz* (1944), *Ruh-o-Kayamat* (1944), *Rup* (Rubaiyat, 1954), *Shabnamistan* (1946), *Dharti ki Kanwat* (1952), *Gul-e-Nagma* (honoured by Sahitya Akademi and Bharatiya Jnanpith in 1969), *Bazme Zindagi and Ranga Shairi* (1970).

Firdausi (930-1020 AD) : A Persian poet. Author of an epic poem, *Shahnama*.

Fitzgerald, Edward (1809-1883) : English poet, translated the *Rubaiyat* of Omar Khayyam (1859).

Flaming, Alexander (1881-1955) : Scottish bacteriologist. Discoverer of penicillin. Received the 1945 Nobel Prize in Medicine jointly with Ernst Boris Chain and Howard Florey.

Forster, E. M. (1879-1970) : British author. Wrote novels or books about India. His *A Passage to India*, published in 1924, paved the way for a British acceptance of Indian independence 23 years later.

Froed, Sigmund (1856-1939) : Austrian psychiatrist and founder of psychoanalysis. *The Interpretation of Dreams*, *Psychopathology of Everyday Life*, *The Ego and the Id* are some of his famous works.

Frebel, F. W. August (1782-1852) : German educational reformer. Founded the kindergarten system of child education.

Gagarin, Yuri (1934-1968) : Russian cosmonaut. First spaceman of the world, he launched into space on April 12, 1961, in Vostok 1 and returned to earth safely. Died in an air crash.

Galenus, Claudius (130-201 AD) : Greek physician. First doctor to diagnose complaints by feeling the pulse. Has written treatises on philosophical and medical matters.

Galileo, Galileo (1564-1642) : Italian scientist and professor of mathematics. Although telescope was invented in 1608, Galileo made one for himself in 1609 and was the first person to study the sky using a telescope. First to see the satellites of Jupiter.

Gama, Vasco da (1460-1524) : Portuguese sailor. Discovered the sea route from Western Europe to India via Cape of Good Hope when he reached Calicut (1498). His discovery made Portuguese the first among the European nations to trade with India and make settlements along the Indian coast.

Gandhi, Indira (1917-1994) : Daughter of former Prime Minister, Jawaharlal Nehru. Was Prime Minister of India for 15 years with a three-year break. Joined Congress Party in 1938. Was Minister of Information and Broadcasting, 1964-1966; Congress President in 1960, 1978 and 1983; and Prime Minister from January 1966 to March 1977 and January 1980 to October 1984. Recipient of 1971 Bharat Ratna, and 1984 Jawaharlal Nehru Award for International Understanding. Shot dead by her own securitymen in 1984.

Gandhi, Kasturba (1869-1944) : Wife of Mahatma Gandhi. Took active part in the social and political activities of Mahatma Gandhi in South Africa and India. Participated in Civil Disobedience Movement and Quit India Movement. Died in prison at Poona.

Gandhi, Mohandas Karamchand (1869-1948) : Hailed as the apostle of peace, Gandhi led the nation and secured independence for India through peaceful, non-violent revolution. Called "Father of the (Indian) Nation". Assassinated by Nathuram Godse. His autobiographical work is *My Experiments with Truth*.

Gandhi, Rajiv (1944-1991) : Elder son of Indira Gandhi. Was Prime Minister from 1984 to 1989 and President of Congress (I) Party. Was killed in a bomb blast at Sriperumbudur near Chennai. Posthumously awarded Bharat Ratna, 1991.

Gandhi, Sanjay (1947-1980) : Younger son of former Prime Minister Indira Gandhi. Was Youth Congress President. Killed in an aircraft.

Garcia, Jerry (d.1995) : American composer, singer and guitarist. Leader of Grateful Dead Rock group with hits such as *Truckin* and *Casey Jones*.

Garibaldi, Giuseppe (1807-1882) : Italian General. With Mazzini and Cavour, liberated his country from foreign rule and created a united Italy.

Gaulle, Charles de (1890-1970) : French General and statesman. Leader of Gaullist Party. Prime Minister, 1958. Gave France a new Constitution, and became its first President in 1959. Granted freedom to many African colonies, and suppressed the Algerian Revolt (1961).

George H. Hitchings : Recipient of 1998 Nobel Prize for Medicine for his work that led to drugs for AIDS, herpes, leukaemia and malaria. Died of Alzheimer disease in February 1998 at the age of 92.

Ghori, Mohammad (12th c. AD) : Founder of Muslim rule in India. In the First Battle of Tarain (Thanear) in 1191, was defeated by Prithviraj Chauhan, king of Delhi and Ajmer. But in the Second Battle of Tarain in 1192, he defeated Prithviraj. Founded Muslim rule in India.

Ghosh, Aurobindo (1872-1950) : Indian revolutionary leader. Founded *Jugantar*, *Karma Yogi* and *Dharma*. First editor of *Bande Mataram*. Became a yogi and philosopher later. His philosophical works are *Savitri*, *Life Divine*, *Essays on Gita*, etc.

Ghosh, Tarun Kanti (d.1996) : The veteran Congress (I) leader and Director of the *Amrit Bazar Patrika* and *Jugantar* publications died on March 24, 1996 after a heart attack in Calcutta at the age of 74.

Ghosh, Tushar Kanti (1898-1994) : Indian journalist. Was editor of *Amrit Bazar Patrika* since 1928. India's longest serving editor.

Giri, V.V. (1894-1980) : Third Vice-President and fourth President of India. Awarded Bharat Ratna in 1975.

Gladstone, William Ewart (1809-1898) : English Liberal statesman. Was four times the Prime Minister of England. Was a classical scholar and writer on church matters. Known as the Grand Old Man of British Politics.

Godrej, Naoroji P. (1927-1990) : Indian Industrialist. Manufactured first indigenous machine tools and typewriters.

Gogh, Vincent van (1853-1890) : Dutch painter. Was the first of the modern expressionist painters. Committed suicide. His last painting was the *Corridor*.

Gokhale, Gopal Krishna (1866-1915) : Indian statesman. Political guru of Mahatma Gandhi. Founded Servants of India Society (1905). President of Indian National Congress, 1907.

Golding, William (1911-1993) : British novelist, teacher, actor and director. His novel *Lord of the Flies* won him Nobel Prize for Literature.

Goldman, Albert (1928-1994) : American biographer. Wrote biographies of Lenny Bruce, John Lennon, and Elvis Presley.

Goldsmith, Oliver (1728-1774) : A distinguished Irish poet, novelist and dramatist, he is known for his novel *The Vicar of Wakefield*. His play *She Stoops to Conquer* was very popular.

Gopi Krishna (1933-1994) : Kathak exponent choreographed over 800 films over a period of four and-a-half decades. Nephew of Sitar Devi, born into the Sukhdev Maharaj family, he evolved his distinct style of Kathak. His speciality was eyebrow movements, a delicate stylisation few could emulate. Created a world record by performing Kathak continuously for nine hours and 20 minutes. Awarded Padma Shri in 1975.

Greene, Graham (1904-1991) : The British novelist and writer of *The Power and the Glory*, *Our Man in Havana*, *The Third Man* and dozens of other novels died at a hospital in the lake Geneva city of Vevey.

Guru, Sri Narayana (19th-20th c.) : Indian social reformer, saint and philosopher from Kerala. Worked for the eradication of untouchability and propagated the philosophy of one caste, one religion and one God. In 1903, formed Sri Narayan Dharma Paripalana Sangam.

Gutenberg, Johann (1400-1468) : German printer. First European to make a printing press (1430). First book printed was a Bible, named after him as *Gutenberg Bible*.

Halley, Edmund (1656-1742) : British astronomer. Discoverer of "Halley's Comet" (1682). Made the first magnetic survey of oceans.

Hammarström, Dag M. (1905-1961) : Swedish statesman. Secretary-General of the United Nations, 1953-61. Helped ease tension between East and

West, Middle East crisis and Congo situation. While flying to Congo in 1961 he was killed in an air crash. Posthumously awarded Nobel Peace Prize.

Hani, Chris (1918-1993): The leader of the South African Communist Party was killed by a white extremist in Johannesburg on April 11, 1993.

Haq, Mazhar-ul (1866-1930): Indian national leader. President of Muslim League (1915). Founder of *The Motherland*.

Hardayal, Lala (1884-1939): Indian nationalist leader. Was General Secretary of Hindustani Association, which was later known as Gadar Party (1913), with its headquarters at San Francisco. Published a magazine, *Vande Mataram*. Organised Indian Independence Committee in Germany. Died in exile in U.S.A.

Harishchandra, Bhartendu (1850-1883): Indian playwright. First to make *Khariboli* (modern Hindi) the medium of prose and plays. Author of *Mudrarakshasa*.

Harshavardhana (590-647 AD): Ruler of northern India (606 to 647 AD). Pulakesin II of the Chalukyas and Narasimha Varman of the Pallavas were his contemporaries. Embraced Buddhism and entertained Chinese traveller Hsien-Tsang in his court.

Hastings, Warren (1732-1818): English statesman and administrator. Beginning his career as a clerk in East India Company, he rose to be the first Governor General of India in 1773. Laid foundations of Indian Civil Services. In England, faced impeachment for corruption and oppression, and was tried for seven years. Eventually was acquitted of all charges.

Hegel, George Wilhelm Friedrich (1770-1831): German philosopher, known for his dialectical method of reasoning with its sequence of thesis-antithesis-synthesis. His works include *The Science of Logic*, *Philosophy of Right*, etc.

Herodotus (485-425 BC): Greek historian. Was called "Father of History" by Cicero. His detailed accounts of wars are marked by descriptions of peoples, cities and empires.

Hidayatullah, Mohammed (1905-1992): Vice-President of India (1979 to 1984). Before that he was the Chief Justice of India.

Hill, Rowland (1795-1879): English postal authority. Invented postage stamps (Penny Post System). Great Britain issued the world's first stamps on May 6, 1840.

Hippocrates (460-370 B.C.): Greek physician, dedicated to the cause of medical science. Known as "Father of Medicine". Rules of conduct for doctors are based on Hippocratic Oath.

Hirohito (1901-1989): Emperor of Japan for 62 years, he went into history as Emperor Showa,

shedding his mortal name. Renounced his legendary divinity in 1946.

Hitchcock, Alfred (1899-1980): British-American film director, often called "Master of Suspense." Made films like *Psycho*, *The Birds*, *North by Northwest*, etc.

Hitler, Adolf (1889-1945): German dictator born in Austria. Led the Nazis and became German Chancellor in 1933, and Fuhrer in 1934. Ordered the invasion of Austria and Czechoslovakia. His invasion of Poland in 1939 started the Second World War. Responsible for genocide of millions of Jews. After Russian occupation of Berlin, committed suicide (in Berlin) in 1945. Author of *Mein Kampf*.

Hsien-Tsang (7th c. AD): Buddhist pilgrim from China. Visited India during the reign of King Harsha. Stayed in India from 629 to 644 AD.

Hobbes, Thomas (1588-1679): British political philosopher. Favoured the supremacy of State even over religion. Author of *Leviathan*, a treatise on theories of government.

Hodgkin, Dorothy (1910-1994): Founder of Pugwash Conference on nuclear weapons. Determined the structure of penicillin, insulin and of Vitamin B₁₂. Won Nobel Prize in Chemistry.

Homer (700 BC): Greek poet, credited with authorship of two great books on Trojan War, the *Iliad* (the story of the ten years of war), and the *Odyssey* (the tale of the ten years of wandering of the Greek Commander, Odysseus.)

Honecker, Erich (1913-1994): East Germany's Marxist leader, ruled the country for 18 years, until people's uprising swept him aside in 1989. Had been living in Chile since early 1993.

Houston, Lawrence R. (1913-1995): Founding father of Central Intelligence Agency (CIA).

Hume, A.O. (1829-1912): Scottish citizen, supporter of India's freedom struggle. Retired from Bengal Civil Service in 1882, and helped form Indian National Congress (1885). Was instrumental in founding British Committee of the Congress in London (1889).

Hunter, John (1728-1793): Scottish physician. Founder of modern surgery. Made discoveries in anatomy.

Hussain, Zakir (1887-1969): Indian national leader. President of India, 1967. India's second Vice-President (1962-1967). Proposed Wardha scheme of education. Awarded Bharat Ratna in 1963. Died in harness.

Ibsen, Henrik Johan (1828-1906): Norwegian dramatist, known as Father of Modern Drama. Revolutionised European theatre through his technique and style. His works are *Ghosts*, *The Wild Duck*, *A Doll's House*, etc.

Ichiro, Kato (1925-1994) : Japanese scientist, known as "Dr. Robot". Invented 2-legged, walking automation that read music.

James Michener : Noted novelist won the Pulitzer Prize in 1948 for his "Tales of the South Pacific". Died at the age of 90 (October, 1997).

Jayadeva (12th c. AD) : Sanskrit poet from West Bengal. Pioneer of Bhakti poetry. Influenced Vidyapati and Chandidas. His *Gita Govinda* describes the love of Krishna and Radha, their separation and final union.

Jayakar, Pupul (1915-1977) : Grand old lady of Indian culture. Chair person of the Indian National Trust for Art & Cultural Heritage (INTACH). Recipient of Padma Bhushan. Wrote several books including a biography of Indira Gandhi, *Dialogues with J. Krishnamurti* and *Earth Mother*.

Jefferson, Thomas (1743-1826) : American spokesman for human liberty. Third President of US (1801-1809). Has authored *Declaration of Independence* in the American Constitution, which contains the famous line "All men are created equal ...". It was largely drafted by him.

Jinnah, Mohammad Ali (1876-1948) : Founder of Pakistan. Was president of Muslim League. First Governor-General of Pakistan (1947).

John Postel (d. 1998) : Internet pioneer of America who wielded enormous influence managing technical details of global computer network. Died in Los Angeles at the age of 55.

Joan, Saint. (1412-1431) : A French peasant girl, was stated to have a vision for bringing glory to France. Inspired the French at Orleans to drive the English out and make Charles the King. Came to be known as the Maid of Orleans. Was caught by the British and burnt alive as a heretic at Rouen. Canonised in 1920.

Johnson, Samuel (1709-1784) : British writer, critic and lexicographer. Among his famous works are *Dictionary* (1755), *Rasselas*, and *Lives of the English Poets*. His biography has been written by James Boswell.

Jones, William (1746-1794) : An indologist, and master of 28 languages—Oriental and European.

Joshi, Bipin Chandra (1935-1994) : The 17th Chief of the Indian army. First Chief of the Army Staff to die in harness.

Joyner, Florence Griffith : The 38-year-old US sprinter who stunned the world with her superb performance and the world record at 100m and 200m in the US Olympics in 1998 and the Seoul Olympics in 1984 respectively, died on September 21, 1998 due to stroke.

Judd, Donald (1929-1994) : American artist. Pioneer of Minimal Art Movement.

Kabirdas (12 c. AD) : Indian saint and poet of Nirguna Bhakti movement. A disciple of Ramananda, he believed in the unity of God and equality of all religions. *Kabir Vachanamrit*, *Kabir Beejak* and *Sakhi* are among his song collections.

Kalhana (11th c. AD) : Kashmiri poet-historian. His *Rajatarangini* gives history of Kashmir up to 10th century A.D.

Kalidas, Mahakavi (400 AD) : Indian poet-dramatist. Lived in Ujjain during the reign of Chandragupta Vikramaditya. Called "Indian Shakespeare". Author of *Abhigyan, Shakuntalam*, *Raghuvamsa*, *Meghdoot*, *Kumarasambhava*, etc.

Kamalbal, Gokhate (d. 1997) : She was the first actress of the Indian screen. She played the role of Mohini in a film produced by Dadasaheb Phalke in 1913 when she was 13 years old. This was the first performance by an actress on the screen when even female roles were played by men.

Kamaraj, Kumaraswami (1903-1975) : A leader of the Indian National Movement. Was Chief Minister of Tamil Nadu (1954-63). President of Indian National Congress, 1963. Author of "Kamaraj Plan". Posthumously awarded Bharat Ratna, 1976.

Kanan Devi : The legendary actress of yesteryears was the recipient of the prestigious Dada Saheb Phalke Award and Indira Gandhi Memorial Puraskar.

Kanishka (2nd c. AD) : The third and the greatest of the Kushan monarchs who ruled north-western India. His territory extended even to Central Asia. A great patron of art and literature. Was also a patron of Buddhism.

Kant, Immanuel (1724-1804) : German scientist-philosopher. Considered exploitation of man as the worst evil. In his works—*The Critique of Pure Reason*, *The Critique of Practical Reason*, and *The Critique of Judgement*, he tried to harmonise materialism with idealism.

Karnath, Shivarama K. (d. 1997) : Noted writer, playwright, educationist, environmentalist and social worker bagged the Bharatiya Jnanpith Award.

Kapur, Rippan (1954-1994) : Founder of Child Relief and You (CRY), 1979. Its aim is to restore to Indian children their basic right to food, shelter, health and education.

Karve, D.K. (1858-1962) : Indian social worker. Established several institutions for the welfare of women. Awarded Bharat Ratna, 1958.

Kautitya : Also known as Vishnugupta or Chanakya—See under Chanakya.

Kaur, Rajkumar Amrit (1889-1964) : Indian freedom fighter. Independent India's first Health Minister in Nehru's Cabinet. Founder of All India Women's Conference. Founder-President of Indian Council of Child Welfare.

Keller, Holan (1880-1968) : A blind and deaf-mute American writer and teacher, did great service to the cause of the handicapped. Has authored *The World I Live In*, *Out of the Dark*, *The Story of My Life*, etc.

Kennedy, John F. (1917-1963) : The youngest and first Catholic President of United States, 1961. Instrumental in Congo unification. Was assassinated. His campaign for giving equal rights to American Negroes is said to have cost his life. Authored *Profiles in Courage*.

Kepfer, Johannes (1571-1630) : German astronomer. Known for his laws of planetary motion.

Khambatta, Persis (d. 1998) : The supermodel and Hollywood actress died in Mumbai on August 18, 1998 following a massive heart attack. Persis Khambatta was about to turn 50 in October. A former Miss India in 1965, Ms. Khambatta went to Hollywood to act in *Star Trek* and other films.

Khan, Chengiz (1162-1227) : Mongol conqueror, came to India during the reign of Iltutmish, but retreated from Sindh. Founded the world's biggest empire, the Mongol Empire. Was bestowed national hero status by China on September 21, 1989.

Khan, Khon Abdul Ghafoor (1890-1988) : Known variously as "Frontier Gandhi", "Badshah Khan", and "Fakhr-e-Afghan". Took active part in India's Freedom Movement. Organised "Khudai Khidmatgar" (Servants of God) Movement. After Partition, fought for Pakhtoonistan. Leader of Red Shirts, NWFP. First foreigner to receive Bharat Ratna in 1987.

Khan, Kublai (1216-1294) : First Mongol emperor of China. Conquered most of Asia. Was a wise ruler and encouraged learning. Grandson of Chengiz Khan.

Khon, Liaquat Ali (1895-1951) : First Premier of Pakistan (1947). Was leader of Muslim League (1946). Assassinated.

Khon, Syed Ahmed (1817-1889) : Muslim educationist and reformer. Champion of Hindu-Muslim unity. Founded Aligarh Muslim University.

Khrushchev, Nikita S. (1894-1971) : First Secretary of the Soviet Communist Party. Succeeded Stalin as head of Soviet Republic, 1958. Instrumental in withdrawal of missile equipment from Cuba. His policy caused disagreement with China. Was removed from office in 1964. Author of *Khrushchev Remembers*.

Khusrau, Amir (1253-1325) : Persian scholar, courtier, saint and master of music. Adorned the courts of Muiz-ud-din Qaiqubad, Jalal-ud-din Khilji, Ala-ud-din Khilji, Qutab-ud-din Mubarak Shah and Ghiyas-ud-din Tughlaq. The *qawwal* style and *chaupal* in Hindi are his contributions. Father of *Sahitara* (Sitar).

Kim Il Sung (1912-1994) : The North Korean President, who built a reclusive Stalinist-style dictatorship in four decades as ruler of the country, died on July 8, 1994 at the age of 82. He had headed the North Korean regime since the Second World War when the two Koreas came into existence. His son, Mr. Kim Jong Il, was nominated to succeed him.

Kim, Satish (d. 1994) : Indian computer scientist. Developed software for India's radar *Scindra*. Employed at General Electric, Milwaukee (USA). Shot dead in USA.

Kipling, Rudyard (1865-1936) : Bombay-born British writer. In his works, he vividly portrayed contemporary British rule in India. His works include: *Kim*, *The Light that Failed*, *Barrack Room Ballads*, *Just So Stories*, *Jungle Books*, etc. First Englishman to receive Nobel Prize for Literature, 1907.

Kitchiw, Self-ud-din (1888-1963) : Founder-President of All India Peace Council. Vice-President of World Peace Council. A close associate of Mahatma Gandhi. Defended the accused in Meerut and Delhi conspiracy cases. First Indian recipient of Stalin Peace Prize, 1954.

Kohr, Harold (1910-1994) : Austria-born social philosopher. Propounded the doctrine "Small is Beautiful".

Kothari, D.S. (d. 1993) : He was a renowned scientist and educationist who died at Jaipur on January 4, 1993 at the age of 87. He had been Chairman of the University Grants Commission, Vice-Chancellor of the Jawaharlal Nehru University and also Chairman of the Education Commission.

Kotnis, Dwarkanath (1910-1942) : An Indian doctor. In 1938, became a legendary figure for his role as leader of Indian medical mission to war-torn China.

Kripalani, Suchota (1908-1974) : Indian nationalist leader and freedom fighter. Was the first woman Chief Minister (U.P.) of Independent India, 1963-67.

Krishnamurthi, Jiddu (1895-1986) : Indian philosopher. Was considered a Messiah by members of "Order of the Star of the East," the society he headed at the age of 20. Later he dissolved the society and toured the world as protégé of Annie Besant. His works include *The Songs of Life*.

Kumar, Nand (d. 1775) : A Bengali patriot, was sentenced to death by Warren Hastings on charges of forgery. Last Indian to be hanged on a charge of forgery.

Kumbha, Rana (15th c. AD) : Ruler of Malwa. Built *Vijaya Stambha* (Tower of Victory) at Chittor in commemoration of his victory against the ruler of Malwa.

Lajpatral, Lala (1865-1928) : He was the Congress leader of the United Punjab. He died of injuries caused by lathi-charge by the police while was leading a demonstration against the Simon Commission in 1928.

Lakshmibai, Rani (1835-1858) : Queen of Jhansi. Wife of Gangadhar Rao. Fought against the army of Hugh Rose. Took active part in the First War of Indian Independence in 1857.

Lamba, Raman : The 38-year old former Indian opening batsman who made a debut against Australia at Jaipur, succumbed to head injuries sustained in a League match in Dhaka in early 1998.

Lantz, Walter (1901-1994) : American animator. Creator of Woody Woodpecker cartoon character.

Larwood, Harold (1905-1995) : England's fast bowler. Known for bodyline bowling. After World War II, migrated to Australia. Authored *Bodyline* (1933) and *The Larwood Story* (1965).

Lavoisier, Antoine (1743-1794) : French chemist. Established that combustion is a form of chemical action. Gave oxygen its name. Guillotined.

Laxmikant (d. 1998) : Noted music director who along with Pearey Lal produced lilting music in many a film. Died at the age of 62 years (Mumbai : May 25, 1998).

Leibnitz, G.W. (1646-1716) : German mathematician and philosopher. Invented differential calculus, a systematic, analytical method of dealing with particular classes of mathematical problems, specially concerned with motion. Also invented a calculating machine.

Lenin, Vladimir Ilyich (1870-1924) : Founder of modern Communist Russia. Leader of Soviet Revolution of October 1917. Liberated the country from the Czars, and became Head of its first Communist Government, 1917-1924. Dedicated himself to the cause of workers' revolution.

Lesseps, Ferdinand Marie (1805-1894) : French engineer. Builder of Suez Canal (1869).

Limaye, Madhu (1922-1995) : An outstanding Parliamentarian and a Socialist leader died of bronchial asthma on January 8, 1995. He was the general secretary of Janata Party when it came to power in 1977 and was elected to the Lok Sabha four times from Banka and Munger constituencies in Bihar. He was a teacher by profession. He authored more than 80 books and left behind a legacy in 1982.

Lincoln, Abraham (1809-1865) : President of the United States in 1861. Won civil war between Southern and northern States and ended slavery in 1863. Was assassinated by John Wilkes Booth, a famous anti-abolitionist actor.

Lister, Joseph (1827-1912) : British surgeon and discoverer of the use of antiseptics (1867). Was the first to repair a broken knee cap by wiring it together. Also invented the drainage tube for large abdominal wounds.

Locke, John (1632-1704) : British political philosopher. Propounder of empiricist theory that all knowledge is derived from experience.

Lohia, Ram Manohar (1910-1968) : Indian socialist leader. Founder of Congress Socialist Party, Socialist Party and Socialist Party of India. Editor of *The Congress Socialist*. Was in charge of Foreign Department in Congress (1936). Promoted Hindi as a national language.

Louis XIV (1638-1715) : A despotic ruler of France. His was the longest reign—61 years—in French history. Was called *Le grand monarque*. Was the builder of Versailles.

Louis XVI (1754-1793) : King of France. Responsible for French Revolution. Was guillotined with his queen, Marie Antoinette, by the French revolutionaries.

Luther King, Martin (1929-1968) : American Negro leader, led a non-violent movement for full civil rights for American Negroes. Was awarded 1964 Nobel Peace Prize. Posthumously awarded Nehru Peace Prize. Assassinated. Among his books are *Why We Can't Wait*, *Where Do We Go From Here*, *Chaos or Communism*.

Luther, Martin (1483-1546) : German reformer. Fought against the Catholic Church and got himself associated with the movement of reformation. Led to the emergence of Protestantism.

Lutyens, Edwin (1869-1944) : British architect. Planned New Delhi, designed the Viceroy's Palace, Cathedral, British Embassy and many other buildings.

Macaulay, Thomas B. (1800-1860) : English statesman and historian. Was an influential figure in Indian education system. Played a key role in introducing English as the medium of instruction and education in India. Authored *England and Lays of India*.

Machlavelli, Immanuel (1652-1707) : Italian philosopher. Justifies the means by the ends. Two of his popular books are *The Discourse of Liberty* and *The Discourse of Wealth*.

Mahalanand, P. C. (1892-1967) : Indian economist. Authored *The Mahalanand Report* on the Central Statistical Institute and *The Mahalanand Report* on the Central Statistical Institute.

Mahatma, Mohandas K. (1869-1948) : Indian leader. Known for his non-violent struggle for the independence of India. Authored *My Experiments with Truth*.

fortification. Strengthened Jainism. He was called *ina*, the Conqueror, and his followers, *Jains*. His place of birth is stated to be Kundagram (alshall) near Muzaffarpur in Bihar.

Maltrayee Devi : Eminent Bengali litterateur and social worker, she was one of the India's leading literary figures.

Malaviya, Madan Mohan (1861-1946) : Indian patriot. Was Congress President twice. Promoted the cause of Indian industry. Edited *Indian Union*, *Hindustan* and *Abhyudaya*. Organised National Party. Founder of Hindu Mahasabha and Banaras Hindu University in collaboration with Tej Bahadur Sapru.

Malthus, Thomas Robert (1766-1834) : British economist. Gave the theory that population increases faster than means of subsistence, and that it can be controlled only by moral (physical) restraint, or disease or war. Author of *An Essay on the Principle of Population*.

Mandel, Ernest (1922-1995) : Germany-born Belgian Marxist revolutionary. Leader of Fourth International founded by Leon Trotsky. Took part in Belgian resistance against Nazi occupation during World War II. Author of several books including *The Third Age of Capitalism*.

Manu (1000 BC) : Law-giver of ancient India. Author of *Manu Smriti*, which divides the Hindu community into four castes.

Marconi, Guglielmo (1874-1937) : Italian electrical engineer. Invented wireless telegraphy and radio. Received 1909 Nobel Prize in Physics jointly with Ferdinand Braun of Germany for development of wireless.

Marx, Karl (1818-1883) : German philosopher. To give material interpretation of history. propounded the doctrine of Communism, also known as Marxism. *Das Kapital* is his monumental work. His another work, done in collaboration with Engels, is *The Communist Manifesto*.

Masih, Iqbal (1983-1995) : A Christian boy. Highlighted the evils of child labour in Pakistan. Was shot dead on Easter Sunday.

Maurya, Chandragupta (340-286 BC) : Founder of Maurya dynasty, the first historical empire in India. Ruled from 322 to 297 BC. Committed suicide. He was militarily strong and had spread his empire beyond India's frontiers.

Maximus, Fabius (d. 203 BC) : Roman dictator. Gave the "Fabian tactics" of deliberately avoiding war to save one's own country. Thus he saved Rome from Hannibal.

Mazumdar, Phani (1911-1994) : Indian producer, director and script writer. Began his film career with New Theatres in 1931 and directed his first film *Street Singer* in 1938. His other films include *Doctor*,

Kapala Kundala and *Aarti*. Script writer for Ramanand Sagar's mega serial *Ramayana*.

Mazzini, Giussepe (1805-1872) : Italian patriot. Dictator of Italian Republic, 1848. Advocated a free and united Italy. Driven out of Italy to England. With Garibaldi, fought for a unified Italy.

Megasthenes (300 B.C.) : Greek ambassador in the court of Chandragupta Maurya. In *Indica*, he has left an elaborate account of the administrative system of the Mauryas.

Mehta, Madhu (1930-1995) : Indian social worker. Leader of Hindustani Andolan. Was an associate of C. Rajagopalachari.

Mehta, Phorozeeshah (1845-1915) : Indian national leader of moderate school. Founder of *Bombay Chronicle* (1913). One of the founders of Indian National Congress. Was Congress President (1890).

Menon, Vallathol Narayana (1878-1958) : Indian poet, associated with theatre and dance. Re-established Kathakali as a major theatre art and revived *Mohiniattam*. Founded Kerala Kalamandalam in 1930. Authored *Sahitya Manjari*, *Badhiravilapam*, etc.

Mesmer, Friedrich (1733-1815) : Austrian physician. Propounder of doctrine of Mesmerism or animal magnetism.

Michelangelo (1475-1564) : Italian painter and sculptor. His sculptural masterpieces are *Pieta*, *David*, *Moses*, and allegorical figures *Day*, *Night*, *Dawn* and *Twilight*. His finest painting is the *Last Judgement*. His most famous works are in the Vatican and Sixtine Chapel.

Mill, J.S. (1806-1874) : British political philosopher. Propounded the theory of utilitarianism advocating greatest good of greatest numbers. Authored *On Liberty*, *Principles of Political Economy*, etc.

Miller, Henry (1891-1980) : Controversial American author, whose early novels were banned in USA for nearly 30 years. His *Tropic of Cancer* shocked readers with its explicit sexuality. Among his earlier works are *The Air Conditioned Nightmare*, *The Books of My Life*, *The Colossus of Maroussi*, *Remember to Remember*, etc.

Milton, John (1608-1674) : A well-known epic poet of England. His poetic works are *Paradise Lost* and *Paradise Regained*.

Minh, Ho Chi (1892-1969) : Vietnamese revolutionary communist leader. Organised the League of Independence (Viet Minh), an Indo-chinese revolutionary nationalist party against French rule. First President of North Vietnam. Was opposed to the unification of Vietnam. However, Vietnam was united in 1975, and Saigon, the capital of South Vietnam, was renamed as Ho Chi Minh city.

Mira Ben (b. 1892) : Real name Madeline Slade. British disciple of Mahatma Gandhi who gave her the name Mira Ben. Winner of 1982 Padma Vibhushan.

Mitterrand, Francois (1916-1996) : France's former Socialist President, who deftly outmanoeuvred opponents on the left and right to lead France from 1981 to 1995, died on January 8, 1996 at the age of 79. He had a long bout with prostate cancer. He was the longest-serving head of state.

Mohammed, Prophet (570-632 AD) : Born in Mecca. Founder of Islam religion. Taught that there is only one God. In 622, the year of the Hijri, he was forced to flee from Mecca to Medina. After he returned to Mecca, the Kaaba was established.

Moody, Helen Newington Wills (1906-1995) : Eight-time winner of Wimbledon titles and 31 other major titles. Moody, nicknamed as "Little Miss Poker Face" and "Queen Helen" ruled the world of tennis between 1920's and 30's. Winning the first US championship in 1923, she retired after winning 1938 Wimbledon. Also wrote three books including her autobiography. The 'story of a Tennis Player', 'Death Serves an Ace' and a tennis instructions book.

Montessori, Maria (1869-1952) : Italian educationist. Founder of Montessori system of child education. This system enables the child to learn naturally and easily.

Moravia, Alberto (1907-1990) : Italy's best-known 20th century novelist. His works include *The Women of Rome* and *Two Women*.

More, Thomas (1478-1535) : British statesman and author. Lord Chancellor under Henry VIII. Was executed because of his refusal to recognise Henry VIII as head of church. In *Utopia*, he describes an ideal state.

Mountbatten, Louis (1900-1979) : Britain's Supreme Allied Commander in South-East Asia during World War II. Was the last Viceroy of India. Granted freedom to India and became independent India's first Governor-General. Assassinated by Irish terrorists.

Mozart, W.A. (1756-1791) : Austrian composer. Among his great operas are : *The Magic Flute*, *Don Giovanni*, and *The Marriage of Figaro*. *Requiem Mass* was his last composition.

Mueller, Max (1823-1900) : German. Sanskrit scholar and philosopher. His writings exposed Indian philosophy and religion to Western philosophers. His works include *The Science of Languages*, *India-What Can It Teach Us*, etc.

Mukherji, Jatindra Nath alias Bagha Jatin (1880-1915) : A prominent leader of revolutionary movement in Bengal. Arranged supplies of arms

and ammunition from Japan, Germany, USA, and Indonesia. He and his comrades were intercepted by the police when they went to take delivery of the arms from the German ship *Maverick* in 1915. Was fatally wounded.

Munda, Birsa (1874-1900) : Indian revolutionary. Pioneer of tribal revivalistic cult. Organised Adivasi Movement against British rule from 1895 to 1900. Died in jail.

Munshi, K.M. (1887-1971) : Indian statesman and author. Founder of Bharatiya Vidya Bhawan in Mumbai. Union Food Minister. Pioneer of "Grow More Trees" movement.

Mussolini, Benito (1883-1945) : Founder of Italy's Fascist Party. Prime Minister of Italy (1922-1943). Dictator of Italy (1925-1943). Supported Germany during Second World War. When Italy was invaded by an Anglo-American army he surrendered in 1943. Shot dead by his own countrymen.

Myrdal, Alva (20th c.) : Swedish advocate of world disarmament. Shared the 1982 Nobel Peace Prize with Mexican diplomat Alfonso Garcia Robles. Wife of Gunnar Myrdal, the noted Swedish economist. Winner of Noble Prize for Economics (1974).

Myrdal, Gunnar (1898-1987) : Swedish economist. Used his background in Sweden's welfare state to write classic works about the poor in America and in developing countries. Author of *An American Dilemma*, and the *Asian Drama*. Shared 1974 Nobel Prize in Economics with his wife Alva.

Nabokov, Vladimir (1899-1977) : The Russian-born English writer whose controversial novels included *Lolita*.

Nagarjun (d. 1998) : Renowned Hindi litterateur. Real name Vaidyanath Mishra. First poet in Maithili region to give direction to the left ideology. Died in Darbhanga (Bihar) at the age of 87 on November 5, 1998.

Nagarjuna (2nd c. AD) : Indian philosopher and scientist (chemist). Adorned the court of Kanishka. Called by Hieun-Tsang as "one of the four lights of the world." In *Madhyamika Sutra*, enunciated the theory of relativity.

Naidu, Sarojini (1879-1948) : Indian poetess of English language, known as "Nightingale of India". Was first Indian woman President of Indian National Congress, 1925. In 1930, led the Salt Satyagraha Movement at Dharsana. In free India, became first woman Governor of an Indian State (Uttar Pradesh). Author of *Golden Threshold*, *Bird of Time*, etc.

Naina Devi (1920-1993) : Dadra and Diu singer. Founder of the music society 'Raao Rang'; received Padmashri in 197

Nair, C.K. Ramakrishnan (1916-1994) : Indian painter. Chairman of Lalit Kala Akademy. Paintings include *On the Sea Shore*, *Temple Fantasy*, *Dead Child*, *Lullaby*, etc.

Nanak, Guru (1469-1538): Founder of Sikh religion. The place of his birth, Nankana Sahib, is located in Pakistan. Was a contemporary of Akbar.

Nanda, Gulzarilal (d. 1998) : The veteran Gandhian, twice interim Prime Minister and 1997 Bharat Ratna awardee, G.L. Nanda passed away in January 1998, 5 months short of 100 years at Ahmedabad (Gujarat). Starting his career as a labour leader Nanda rose to become the first Deputy Chairman of Planning Commission and held the important portfolios of Labour, Home etc., besides Acting PM twice.

Naoroji, Dadabhai (1825-1917): Indian freedom fighter. Known as "Grand Old Man of India" and "Father of Indian Politics and Economics." One of the founders of the Indian National Congress, he served as its President thrice. First Indian to be elected member of British House of Commons. Founded Bombay Association (1852), and Gyan Prasarak Mandali, a Girls' High School at Bombay. Author of *Poverty and Un-British Rule in India*.

Narayan, Jayaprakash (1902-1979) : Indian freedom fighter, Socialist and Sarvodaya leader. Was instrumental in the formation of Janata Party which defeated Congress in 1977 general elections. Popularly known as Loknayak, was conferred Rashtra Bhushan in 1977. His works include *Why Socialism*, *Towards Struggle*, *From Socialism to Sarvodaya* etc. Awarded Bharat Ratna (posthumous) in December 1998.

Nasser, Gamal Abdel (1918-1970) : Dictator-president of Egypt. In 1956, nationalised Suez canal. One of the founders of Non-Aligned Movement along with Pt. J.L. Nehru of India and Marshal Tito of Yugoslavia. Instrumental in bringing an end to the civil war in Jordan.

Nehru, Jawaharlal (1889-1964) : First Prime Minister of free India, 1947-1964. Pronounced the doctrine of Panchsheel, which advocated peaceful coexistence, non-alignment and non-interference in international relations. Authored *The Discovery of India*, *Autobiography* and *Glimpses of World History*. Awarded Bharat Ratna, 1955.

Nehru, Motilal (1861-1931) : Indian national leader. Founder of *Independent* (1919), a daily advocating Home Rule for India. Chairman of the Commission Inquiring Into Jallianwala Bagh Massacre. Formed Swarajya Party with C.R. Das. Leader of Opposition in Central Legislative Assembly. Renamed Anand Bhawan as Swaraj Bhavan and gave it to Congress in 1930.

Nelson, Horatio (1758-1805): British admiral. At the siege of Calvi in 1794, lost his right eye; and at the siege of Santa Cruz in 1797, lost his right arm. In 1798, defeated the French at Nile. In 1805, defeated the French and Spanish fleets at Trafalgar, but was himself mortally wounded.

Newton, Isaac (1642-1727): British physicist and mathematician. Discovered the laws of gravitation and a great deal about the nature and composition of white light. His Laws of Motion are foundation of science of mechanics. Made many discoveries in mathematics. Author of *Principia*.

Nicholas, St. (4th c. AD) : Russian patron saint. Associated with Christmas as 'Santa Claus', a person said to fill children's stockings with presents on Christmas eve.

Nietzsche, Friedrich (1844-1900): German poet and philosopher. Propounded the concept of superman and that only the strong should survive. His works include *The Will to Power*, *Beyond Good and Evil*, *Thus Spake Zarathustra*.

Nightingale, Florence (1820-1910): English nurse. Organised nursing service in aid of soldiers wounded in the Crimean War. Known as "The Lady with the Lamp". Nightingale Home for Nurses founded in her memory.

Nixon, Richard Milhous (1913-1994): 37th President of United States. Played major role in resuming ties with China and initiating detente with the then Soviet Union. Resigned from office in 1974 after Watergate scandal.

Nobel, Alfred B. (1833-1896) : Swedish scientist. Invented dynamite. Bequeathed wealth collected from the manufacture of explosives for annual prizes to those contributing most in the fields of Physics, Chemistry, Physiology and Medicine, Literature and Peace. The Prize for Economic Science was instituted in 1969.

Norgay, Tenzing (1914-1986) : Nepalese mountaineer. Known as "Tiger of Snows". The ace mountaineer, with Edmund Hillary, was the first to climb Mount Everest in 1953. Winner of George Cross, Nepal Tara and many other awards.

Nostradamus (1503-1566) : French doctor. Could often predict how an illness would progress. Wrote predictions in verse and published them. Had correctly predicted the way Henry II of France would die.

Nu, U (1907-1995) : First Prime Minister of independent Myanmar (Burma). After the assassination in 1947 of Aung San, considered the Father of Myanmar Independence, U Nu became the Prime Minister of free Burma in 1948. Was toppled by Ne Win, and sought asylum in 1969 in Thailand. In Bhopal also, he lived for six years. But returned home in 1980, never to enter politics again.

Nyerere, Dr. Julius K. (1911-1999): Tanzanian President is the recipient of the first Gandhi Peace Prize which was presented to him by the President, Dr. Shankar Dayal Sharma, in New Delhi on January 27, 1996. He had earlier been honoured by the Government for his lifelong contribution for promotion of international understanding when the Jawaharlal Nehru Award was conferred on him in 1973. He was Chairman of South Commission died in Oct. 1999.

Oldham, Thomas (1816-1878): American geologist, was a pioneer in the explorations of coal resources of India. Associated with the establishment of Geological Survey of India.

Om Prakash (d. 1998): Veteran character actor and comedian remembered for his witty dialogues.

Oort, Jan (1900-1992): Dutch astronomer. Put forward the theory that Milky Way galaxy rotates and the solar system lies on its outskirts. Also proposed the existence of ice chunks, *Oort cloud*, beyond Pluto.

Padmini (13th c.): Queen of Rana Ratan Singh of Mewar. Was so exquisitely beautiful that Ala-ud-din Khiliy was infatuated and attacked the Rajput kingdom to get her. However, he failed in his mission.

Pal, Bipin Chandra (1858-1932): Indian national leader. A radical, led the Swadeshi movement. Founded *New India* and *Bande Mataram*. With Tilak and Lajpat Rai, formed the extremist group in Congress known as 'Garam Dal'.

Pande, B.N. (d. 1998): Veteran freedom fighter and former Governor of Orissa.

Pande, Mangal (d. 1857): First martyr of India's Freedom Movement. On March 29, 1857, exhorted his comrades to fight against the use of greased cartridges, and sparked off Sepoy Mutiny. Court-martialled and hanged.

Pandit, Vijayalakshmi (1900-1990): Daughter of Motilal Nehru and sister of Jawaharlal Nehru. First woman President of United Nations General Assembly. First woman minister of a State (U.P.), and India's first High Commissioner to U.K.

Panditgrahi, Sanjukta (d. 1997): She was acknowledged as one of the most renowned Odissi classical dancers. She was the first Orissa girl to make classical dancing her career.

Panini (5th c. BC): Sanskrit grammarian. His *Ashtadhyayi* contains rules of syntax, moods, word derivation, etc.

Pant, Gobind Ballabh (1887-1961): Indian national leader. Known for "Pant Report" on agrarian reforms in UP. In 1937, formed the first Congress ministry in U.P. As Chief Minister of UP (1946), abolished Zamindari. Home Minister of Central Government (1955). Awarded Bharat Ratna, 1957.

Paramahansa, Ramakrishna (1836-1886): Indian saint from Bengal. Worked for upliftment of Hindu society. Guru of Swami Vivekananda. Ramakrishna Mission has been founded in his memory.

Pare, Ambroise (1517-1590): French surgeon. Innovated the idea of using ligatures (or stitches) to sew up arteries while attending to wounds.

Parkinson, C. Northcote (1909-1993): British historian. Author of the *Parkinson's Law*, a satire on office organisation, which states that work expands to fill the time available. His other works are *Left Luggage*, *Inlaws and Outlaws*, *Pursuits of Progress*, etc.

Parthasarathy, G. (1912-1995): Indian educationist and diplomat. First Vice-Chancellor of Jawaharlal Nehru University. First Chief Editor of Press Trust of India (1950). President of Indian Council of Social Science Research. Architect of Kashmir accord under which Sheikh Abdullah returned to power in Jammu and Kashmir in 1975.

Pasternak, Boris (1890-1960): Russian poet and writer. *Dr. Zhivago*, his great work, won him Nobel Prize for Literature in 1958, but he declined the offer. *Dr. Zhivago*, which describes the Russian revolution and is in the Russian narrative tradition, had been published abroad.

Pasteur, Louis (1822-1895): French scientist. Founder of microbiology and immunology. First to show that germs are the cause of infectious diseases. Devised the process of pasteurisation of milk. Founder of Pasteur Institute in Paris.

Patanjali (2nd c. BC): Indian grammarian. Founder of Yoga School of Philosophy. Author of *Yogasutras*.

Patel, Sardar Vallabhbhai (1875-1950): Indian national leader. Led peasants' agitation against increase in land revenue at Bardoli. Founder of *Satyagraha Patrika*. Congress President at Karachi session (1931). Minister of Home Affairs, Information and Broadcasting in Interim Government. First Deputy Prime Minister of India. Was responsible for integration of princely States into Indian Union. Known as "Iron Man of India" or "Bismark of India." Posthumously awarded Bharat Ratna, 1991.

Patel, Tribhuvandas K. (1904-1994): Was one of the founding fathers of Amul milk cooperatives. Shared 1963 Magsaysay Prize with V. Kurien.

Patnalk, Biju (d. 1997): The veteran freedom fighter and former Orissa Chief Minister was born in a family of patriots in Cuttack on March 5, 1916. His passion for flying made him leave his B.Sc. and led him to join the Royal Air Force. He undertook secret flying missions carrying Indian leaders for which he was caught in 1943 and jailed for two years. At Nehru's instance, he flew several

times over Dutch vigilance to rescue Indonesian freedom fighters. He was also the first person to fly a plane carrying Indian soldiers to Srinagar to repulse the Pakistani attack in 1948.

Pauling, Linus C. (1901-1994) : American scientist and anti-nuclear activist. Advocated use of vitamin C to prevent common cold, cancer, etc. Only person to win two Nobel Prizes (Chemistry—1954; Peace — 1962) on his own.

Paz, Octavio (d. 1998) : Mexico's foremost literary figure and former ambassador to India. Won Nobel Prize for Literature.

Peale, Norman Vincent (1898-1993) : American religious leader and preacher of positive thinking. The 1964 movie, "One Man's Way", is based on his life. His *The Power of Positive Thinking* is an ideal self-help book.

Pearry, Robert E. (1856-1920) : American explorer of Arctic. First to reach the North Pole by overland journey in 1909.

Pellets, Rudolph (d. 1995) : Nuclear scientist. His work on nuclear fission, done in collaboration with Otto Frisch (British) in 1940, led to the development of USA's first atomic bomb in 1945.

Pendharkar, Bhattachandra Govind : The 94-year-old doyen of Marathi cinema was the recipient of the Dada Saheb Phalke Award for 1992.

Pericles (490-429 BC) : Athenian orator and statesman. Athens reached the zenith of her glory under his leadership. Died of plague. His memorial, built by Pericles himself, is called "Parthenon".

Phule, J.G. (1827-1890) : Indian social reformer and Guru of B.R. Ambedkar. Belonged to the Mali community of horticulturists of Pune. Founder of the Satyasodhak Samaj. Remembered as *Mahatma Phule*.

Picasso, Pablo (1881-1972) : Spanish painter, peer of Cubist painting. His *Les Femmes d'Alger* marks the beginning of Cubist phase. His famous painting *Guernica*, expresses his horror at outrages of Spanish Civil War.

Plato (427-347 BC) : Greek philosopher. Was student of Socrates and teacher of Aristotle. Plato's *Dialogues* includes *Republic*, the most celebrated of his works.

Poe, Edgar Allan (1809-1849) : American poet and story writer. Wrote *Tales of Mystery and Imagination*, which includes the first detective story, *The Murders in the Rue Morgue*.

Polo, Marco (1254-1324) : Italian traveller. Visited the court of Mongol Emperor Kublai Khan, the grandson of Chengiz Khan. Wrote an account of his journeys to China and Far East, which is entitled as *The Book of Marco Polo*.

Porus (4th c. BC) : Also known as Purushottam, was the Hindu king of Punjab, who nearly defeated

Alexander when the latter invaded India. Alexander, who admired his opponent's chivalry and gallantry, returned the kingdom to Porus.

Prabhu, A.N. (d. 1995) : An eminent journalist and formerly Executive Editor of *The Hindustan Times*, he had been associated with *The Economic Times* and the *UNI* and was an active free lance writer.

Pratap, Maharana : He was the most illustrious Rajput ruler of Mewar. He was a great patriot who had refused to acknowledge Akbar's overlordship. He was defeated at Haldighati in 1576 by Akbar's forces headed by Raja Man Singh and Asaf Khan II; he took refuge in a remote fortress.

Prakasam, Tanguturi (1872-1957) : Indian freedom fighter. Known as *Andhra Kesari*. Founded a daily, *Swarajya*. As Revenue Minister abolished zamindari system in Chennai. Chief Minister of Madras (1945), and Andhra Pradesh (1953).

Prasad, Rajendra (1884-1963) : First President of India. Was Chairman of the Constituent Assembly. Minister for Food and Agriculture in Interim Government. Editor of *Desh*. Awarded Bharat Ratna, 1962. Author of *India Divided*.

Premchand, Munshi (1880-1937) : Indian writer and novelist. Real name Dhanpatrai. Wrote in Urdu under the pen-name Nawabral. His works include *Godan*, *Sevasadan*, *Rangmanch*, *Gaban*, *Nirmala*, etc.

Prestley, Elvis (1935-1977) : American rock singer. Earned the nickname, "Elvis the Pelvis" for the way he rocked his hips as he sang and played the guitar.

Priestley, J.B. : The British writer, who was known as one of the world's most prolific and social-conscious writers. His works included *The Good Companions*, *Angel Pavement: An Inspector Calls* and the play, *Dangerous Corner*.

Priestley, Joseph (1733-1804) : British scientist. Discovered oxygen. Made for the first time hydrochloric acid, sulphur dioxide, ammonia. Also invented soda (carbonated water). Called Father of Modern Chemistry, and also Father of Soda Pop.

Protima Bedi (Gauri) : The founder of Nrityagram, a renowned dancer and the former wife of actor Kabir Bedi, Protima Gauri was killed in a major landslide in the hills of Kumaon, 46 km from Mansarovar in August, 1998. She was one among the Kailash Mansarovar pilgrims.

Ptolemy, Claudius (100-178 AD) : Egyptian geographer and astronomer. His suggestion that the sun and the planets moved round the earth was accepted for centuries until Copernicus disproved it in 16th century. Also proved that the earth was round, and suggested lines of longitude and latitude, etc. Author of *Almagest*.

Pulakesin II (608-642 AD) : A Chalukya king. Defeated Harshavardhana.

Puttappa, K.V. (1904-1994) : Kannada poet, popularly known as "Kuvempu". Recipient of many awards.

Pythagoras (582-500 BC) : Greek philosopher and mathematician. Expounded numerology to understand the universe. Renowned for his theorem of geometry, known as "Pythagoras' theorem." His other contributions are multiplication table, decimal system and square on hypotenuse.

Qasim, Muhammad bin (7th-8th c. AD) : The first Muslim invader of India, made Sind a province of Arab dominions after defeating Dahir, the Hindu King.

Radhakrishnan, Sarvepalli (1888-1975) : Second President of Indian Republic. First Vice-President of India. Author of *Bhagavad Gita*, *The Hindu View of Life*, *Indian Philosophy*, etc. Awarded Bharat Ratna, 1954, and Templeton Prize, 1975. A great teacher. Teachers Day is observed on 5th September on his birth anniversary.

Rahman, Mujibur (1920-1975) : Known as "Bangabandhu", Founding Father of Bangladesh and its first President and Prime Minister. In August 1975, he and his family were assassinated in a coup, led by a group of Islamic army majors.

Rai, Lala Lajpat (1865-1928) : Indian national leader. Known as "Lion of Punjab". Founder-editor of *Bande Mataram*, *The Punjabee* and *The People*. Founded Servants of People Society (1924). Died of injuries caused by police lathi-charge while leading a demonstration against Simon Commission at Lahore in 1928. Author of *Young India*, the *Arya Samaj*, and *England's Debt to India*.

Raj Kapoor (1924-88) : The great showman of Indian cinema was the recipient of the Dada Sahib Phalke Award.

Rajagopalachari, C. (1878-1972) : Popularly known as "Rajaji". First and last Indian Governor-General of India during 1948-50. Earlier, was Chief Minister of Madras, Union Minister and Governor of West Bengal. Was Minister for Industry, Supply, Education and Finance in Interim Government. Founder of Swatantra Party (1959). Awarded Bharat Ratna, 1954.

Rajneesh, Acharya (20th c.) : Popular as 'Osho'. Preached the pleasure principle. Until 1989, he called himself 'Bhagwan'. Established an ashram at Lonavla, near Mumbai. Author of many books, including *From Sex to Superconsciousness*.

Ratelgh, Walter (1552-1618) : English statesman, sailor and poet. Established a settlement, now called Virginia. Introduced tobacco

and potato plants in England. Authored *History of the World*. Executed on charges of conspiracy against James I.

Ramachandran, M.G. (1917-1987) : First film-star Chief Minister (Tamil Nadu). Founder-leader of All India Anna Dravida Munnetra Kazhagam. Posthumously awarded Bharat Ratna, 1988.

Raman, C.V. (1888-1970) : Indian physicist. Founder of Indian Institute of Science, Bangalore. Discovered "Raman Effect" which won him Nobel Prize in Physics in 1930. Made a study of crystallography and lattice dynamics. Was awarded Bharat Ratna, 1954, and Lenin Peace Prize, 1958. Designated as "National Scholar", 1958.

Rama Rao, N.T. (d. 1996) : The Chairman of the National Front and former Chief Minister of Andhra Pradesh died on January 18, 1996 at the age of 73 after a massive heart attack. The most popular film star and political leader of Andhra Pradesh had lost power as Chief Minister on August 31, 1995 due to a split in his Telugu Desam Party.

Ramanuja, Acharya (11th c. AD) : Indian religious teacher and founder of Rama Bhakti movement. Regarded as one of the Vaishnavite gurus and has been given a place in temple worship in South India.

Ramanujam, Srinivasa (1887-1920) : Indian mathematician. Contributed to the theory of numbers.

Ranasinghe, Premadasa : The former Sri Lankan President, along with all his security guards, was assassinated in a powerful bomb blast set off by a suicide bomber during a May Day rally in Colombo in 1993.

Ranga, N.G. (1901-1995) : Indian freedom fighter. Served as a member of parliament for a record number of 50 years and found a place in the *Guinness Book of World Records*.

Rao, Rajeshwar (d. 1994) : The veteran Communist leader, who held sway over the movement for over six decades.

Raphaet, Santi (1483-1520) : Italian painter. Famous for his paintings of Madonna and Child. His other paintings include *St. George and the Dragon*, *The Adoration of the Trinity*, and *Marriage of the Virgin*.

Raut, Bajl (1925-1938) : Indian martyr. Boatman and volunteer of Praja Mandal in Dhenkanal. Shot when refused to take police troops across Brahmini river at Nilkanthapur. Immortalised for his bravery in Sachl Routray's poem "Boatman".

Ray, Satyajit (1922-1992) : Indian film maker for Lifetime Achievement Winner of Bharat Ratna, Special Oscar and many other national and

International awards. First Indian film maker to win Legion d'Honneur, the highest civilian award of France. His films include *Pather Panchali*, *Ashani Sanket*, *Apur Sansar*, *Mahanagar*, *Charulata*, *Agantuk*, *Aparajita*, etc. Often called a renaissance man for his realistic style and theme. Author of *Our Films and Their Films*.

Raya, Krishnadev (16th c.) : A ruler of Tuluva Dynasty of Vijayanagar Kingdom in Southern India. The glory of Vijayanagar spread far and wide during his reign (1509-29 AD). Besides being a great warrior, he was a patron of art and literature.

Razia Sultana (13th c.) : Daughter of Sultan Alauddin, she was the first and only Muslim lady ever to rule from the throne of Delhi.

Reddy, G. Ram (1930-1995) : Pioneer of distance education in India. Founder Vice-Chancellor of Andhra Pradesh Open University. India's first open university. Founder Vice-Chancellor of Indira Gandhi National Open University. Vice-Chancellor of Osmanli University. Chairman of UGC and ICSSR. Winner of Commonwealth of Learning Award and International Council for Distance Education Award of Excellence.

Robespierre, Maximilien F. (1758-1794) : A leader of French Revolution. Known as the "Incorruptible". Was President of Committee of Public Safety during Reign of Terror. Sent thousands to guillotine, but ultimately was himself guillotined.

Rockefeller, John Davison (1839-1937) : American industrialist and philanthropist; was world's richest man. Established Rockefeller Foundation to promote educational, cultural and social welfare in various countries of the world.

Roerich, Devika Rani (1908-1994) : First lady of Indian silver screen. Grand-niece of Rabindranath Tagore and daughter of first Indian Surgeon-General, Col. M.N. Chaudhuri. Acted in *Achhoot Anya*, *Nimala*, *Jaewan*, *Izzat*, *Vachan*, etc., along with her first husband Himanshu Rai (founder of Bombay Talkies). Produced films like *Bandhan*, *Bhabhi*, *Kangan*, *Punarmilan*, etc. After the death of Rai, married Svetoslav Roerich, a Russian painter, in 1945. First recipient of Dada Saheb Phalke award in 1969.

Roosevelt, F.D. (1882-1945) : American President. Only American to be elected four times to the highest office. During his presidency, America entered World War II and tilted the scales in favour of the Allies. Remembered for his New Deal economic reform in America.

Rousseau, Jean-Jacques (1712-1778) : French political philosopher. Propounded Social Contract Theory — that men were born free, but lived

everywhere in chains. His ideas led to French Revolution and establishment of republics in different parts of the world. His *Confessions* was published after his death.

Roy, Bidhan Chandra (1882-1962) : Indian national leader. First Indian to obtain MRCP and FRCS in one calendar year. Mayor of Calcutta (1931). Chief Minister of West Bengal (1948-1962). Awarded Bharat Ratna, 1961.

Roy, Manabendra Nath (1889-1945) : Real name Narendranath Bhattacharya and better known as M.N. Roy. Founder of Indian Federation of Labour and Radical Democratic Party. Published *Vanguard*, a communist journal. Authored *India in Transition*.

Roy, Raja Rammohun (1772-1833) : Founder of Brahmo Samaj. Worked for eradicating evils like Sati, child marriage and Purdah. Championed widow remarriage and women's education. Favoured English system of education in India.

Russell, Bertrand (1872-1970) : English philosopher and mathematician. Won Nobel Prize for Literature in 1950. Advocated world peace and human approach to international problems. Champion of Nuclear Disarmament Movement. His books are *Principia Mathematica*, *History of Western Philosophy*, *Analysis of Mind*, *Impact of Science on Society*, *Marriage and Morals*, *Problems of Philosophy*, etc.

Rutherford, Ernest (1871-1937) : British physicist. Called the Father of Nuclear Physics. First to split atom and obtain nuclei of hydrogen. Won Nobel Prize in Chemistry (1908).

Saha, Arati (1933-1994) : First Asian woman to cross English Channel in 1959 (from France to England). Achieved the feat in 16 hours and 20 minutes. First swimmer to win Padma Shri.

Saha, Meghnad (1893-1956) : Indian scientist. Did research in astrophysics. Propounded the theory of thermal ionisation. Author of *History of Hindu Science*.

Sakharov, Andrei D. (1921-1989) : Father of the (Soviet) hydrogen bomb. Winner of Nobel Peace Prize, 1975.

Salam, Abdus (d. 1996) : The only Nobel Prize winner of Pakistan, he had won the Nobel Prize for his work on Particle Physics in 1979. He was a physicist who made Einstein's dream come true.

Salk, Jonas : Medical pioneer Dr. Jonas Salk who developed the first vaccine to halt polio's crippling rampage and later tried to find a treatment for AIDS died on June 23, 1995 following a heart failure. In 1950, he used killed virus to develop the first polio vaccine. His injectable vaccine was declared effective in 1955.

Samudragupta (330-380 AD) : A valiant conqueror of Gupta dynasty, he brought under his control the whole of northern and central India and later led a successful expedition of Deccan defeating many kings. Himself a poet and musician, he also patronised men of letters.

Sanga, Rana (15th-16th c.) : Rajput king of Mewar. Although he had lost one eye, one hand and one leg, distinguished himself as a great warrior. In spite of his valiant fight, he was overcome by Babar in 1537 at the Battle of Khanwa.

Sankaracharya (b. 788 AD) : Indian philosopher and scholar. Revived Hindu religion. Founder and proponent of Advaita philosophy. Established *Maths* at the four corners of India. Also known as *Adi Sankara*.

Sankhata, Kaifash (1924-1994) : Indian Wildlife specialist. First director of Project Tiger. Recipient of Padma Shri.

Sapru, Tej Bahadur (1872-1949) : Indian lawyer. Was a law member of Viceroy's executive council. Defended INA POWs in the famous Red Fort trial. First President of Indian Council of World Affairs. New Delhi's Sapru House is named after him. Pleaded for dominion status for India.

Sarabhai, Vikram (1919-1971) : Chairman of Atomic Energy Commission. First Chairman of Indian National Committee for Space Research. Responsible for Equatorial Rocket Launching Station, Thumba, Thiruvananthapuram.

Saraswati Swamikal, Sri Chandrasekharendra (d. 1994) : The Paramacharya (senior pontiff) of the Kanchi Kamakoti Peetham died at his *mutt* in Kancheepuram, 15 km from Chennai.

Saraswati, Anandbodh (1903-1994) : Founder editor of *Milap*. A great Arya Samajist who became a Sanyasi. Was president of International Aryan League.

Saraswati, Sahajanand (1889-1951) : Indian freedom fighter. Founder of Sitaram Ashram. Founder-President of Bihar Kisan Sabha (1927). President of All India Kisan Sabha. Editor of *Lok Sangarasha* and *Bhoomihari Brahmin*.

Saraswati, Dayanand (1824-1883) : Hindu social reformer and founder of Arya Samaj. Fought for abolition of untouchability, widow remarriage and against other social evils. In *Satyartha Prakash*, he critically examines and compares various religions.

Sarla Ben (1900-1932) : Real name Katherine Mary Heilani. European disciple of Mahatma Gandhi. Set up an ashram at Kausani in Kumaon (U.P.). Author of *Reviving our Dying Planet*.

Sartre, Jean-Paul (1905-1980) : French writer and existentialist philosopher. Recipient of 1964

Nobel Prize for Literature, which he turned down. His philosophical work is *L'etre et le neant*.

Satyamurti, S. (1887-1943) : Indian freedom fighter. Known as Fire-brand of South India. Made plans for Poondi Dam Project, later renamed as Satyamurti Sagar.

Savarkar, V.D. (1883-1966) : Indian revolutionary leader. Founded Mitra Mandal aimed at achieving freedom by armed rebellion. Founder of *Abhinav Bharat*. Started Free India Society in London. Arrested in Nasik Conspiracy case and sentenced to transportation for life. Freed in 1937. Author of *Indian War of Independence*.

Schweitzer, Albert (1875-1965) : German missionary. At Lambarene in Africa, founded a hospital to fight leprosy and sleeping sickness. Awarded Nobel Peace Prize, 1952.

Scott, Robert F. (1868-1912) : British explorer. Reached South Pole in 1912, just after the Norwegian Amundsen. All members of Scott's party died while returning.

Sen, Mihir (1930-1997) : India's ace swimmer who died in Calcutta on June 11, 1997. A lawyer by profession, he was the first Indian ever to have swum the English Channel (1966). Also swam across Gibraltar Strait and Palk Strait.

Sen, Surya Kumar (1893-1934) : Indian revolutionary leader. Involved in Paharali (Assam-Bengal) Railway dacoity at Chittagong. Implicated in the establishment of Dakhineswar bomb factory, but avoided arrest. Organised Indian Republican Army (Chittagong Branch). Executed.

Senna, Ayrton (1960-1994) : Brazilian race driver. One of seven drivers to win world championship thrice. Died in a crash during San Marino Grand Prix.

Shaftsbury, Earl of (1801-1885) : British social reformer. Responsible for Factory Acts forbidding children and women to work in mines. Champion of anti-slavery campaign. Contributed to the cause of lunatics.

Shahjahan (1592-1666) : Mughal Emperor of India (1627 to 1658). His period is described as the Golden Age of the Mughals. Built Taj Mahal at Agra in memory of his wife Mumtaz Mahal. Lal Quila and Jama Masjid in Delhi were also built by him.

Shakespeare, William (1564-1616) : English poet and dramatist. Born at Stratford-on-Avon. His first work was a long poem, *Venus and Adonis*. His other major works are *Hamlet*, *Macbeth*, *Merchant of Venice*, *Twelfth Night*, etc.

Shankar (1902-1999) : Indian cartoonist, and founder of International Dolls Museum, International

Children's Art Competition, *Shankar's Weekly*, etc.

Shankaracharya (b. 788 AD) : He was one of the world's greatest scholars and philosophers. He revived the Hindu religion and successfully threw back the tide of Buddhism and Jainism. He was the founder and proponent of the Advaitic philosophy and received the veneration and respect of all Hindus. He founded *mutts* all over India during his short life in the 8th century AD.

Sharan Ranf (20th c.) : India's first professional woman sarod player. First woman instrumentalist to receive Padma Shri (1968). First to introduce Indian classical music to Australia, Mongolia, Iran and Fiji. First to attempt an instrumental duet of Indo-Persian music.

Shastri, Lal Bahadur (1904-1966) : Second Prime Minister of India, 1964. Earlier as Railway Minister, resigned in 1956 following a major train accident. Dealt with Pakistani invasion of Kashmir firmly (1965). Signed Tashkent Agreement and died in Tashkent itself. Awarded Bharat Ratna posthumously in 1966.

Sher Shah Suri (16th c.) : A Muslim ruler of Afghan origin who drove out Mughal emperor Humayun and established himself as master of India. He built the Grand Trunk Road.

Shivaji (1627-1680) : Maratha leader. Greatly inspired by his mother Jijabai and Guru Ramdas. Fought the Mughal emperor Aurangzeb tooth and nail. Vanquished the Generals sent by Aurangzeb and succeeded in establishing a Hindu State in Deccan.

Singh, Bhagat (1907-1931) : Known as *Shahid-e-Azam*. Founded Naujawan Bharat Sabha. Exploded bomb in Central Legislative Assembly at Delhi on April 8, 1929. Was arrested and sentenced to transportation for life. He, along with Sukh Dev and Shivram Rajguru, was hanged on March 23, 1931, for participation in Lahore conspiracy.

Singh, Charan (1902-1987) : Lok Dal leader. Deputy Prime Minister during Janata regime. Was Prime Minister for a brief period in 1979-80.

Singh, Giani Zail (1916-1994) : Indian freedom fighter. President of India, 1982-87. First Sikh President and first from the backward class (Ramgarhia) to be the President. Was also the Chief Minister of Punjab. Died in a car accident near Chandigarh.

Singh, Gurcharan (1898-1995) : Grand old man of Indian pottery. Pioneer of "art pottery", also known as studio pottery. A founder-member of All-India Fine Arts and Crafts Society. Publicised the art of commercial pottery (or blue pottery) and tile making.

Produced hand-painted and blue tiles used in modern bathrooms in many government buildings (including the Parliament House). Donated his ceramic artifacts to a museum in Chandigarh. Winner of Padma Shri, 1991.

Singh, Guru Gobind (1675-1708) : The 10th and last Guru of Sikhs. Regarded as the real founder of Sikh power in India. Organised the Sikhs as a martial race and spent a major part of his life fighting the Mughals. Founded Kalsa Panth whose Tri-centenary was celebrated in Anandpur Sahib in April '99.

Singh, Nagendra (d. 1988) : First Indian President of International Court of Justice (1970). Was also the first Indian Judge of the Court. First Indian recipient of World Justice Award. Awarded Padma Vibhushan in 1973.

Singh, Rajinder (1911-1994) : First member of Indian armed forces with a double Mahavir Chakra decoration. Nicknamed "Sparrow".

Singh, Ranjit (1780-1839) : Sikh ruler of Punjab, respected even by the British. His empire included Punjab, Kashmir and even extended to the base of Afghan hills.

Singh, Roshan (1894-1927) : Indian freedom fighter, and member of the revolutionary organisation, *Matirvedi Sanstha*. Participated in Kakori train dacoity in 1925. Hanged to death.

Singh, Tara (1885-1967) : Leader of Gurdwara Reform Movement. Secretary of Shiromani Gurdwara Prabandhak Committee. President of Akali Dal (1930). Was against Partition of India. Later formed Save Democracy Committee and demanded a separate Sikh state.

Singh, Udharn (1898-1940) : Indian revolutionary. Shot dead Michael O'Dwyer, Governor of Punjab responsible for Jallianwala Bagh Massacre. Executed in London.

Sinha, Sachchidananda (1871-1950) : Indian educationist and journalist. Vice-Chancellor of Patna University. Editor of *Hindustan Review*. Publisher of *Indian Nation*. The oldest member of Constituent Assembly, was India's Acting President in 1946, before first President Rajendra Prasad.

Siraj-ud-Daulah (1728-1755) : Nawab of Bengal. In 1756, locked up over 100 Europeans in a dungeon for one night in summer. All the occupants died of thirst, except one Mr. Holwell, who wrote an account of it. The place is known as the Black Hole of Calcutta. Was defeated at the Battle of Plassey by Clive, and murdered.

Sitaramalah, Pattabhi (1880-1959) : Indian national leader. Founder of *Janmabhumi*. Congress President (1948). Responsible for reorganisation

of States on linguistic basis (1956), and also for setting up of cooperative banks. Congress party's official historian.

Slovo, Joe (1927-1995) : Leader of Black Liberation Movement. Chief of Communist Party of South Africa.

Smith, Adam (1723-1790) : Scottish economist. Known as Father of Economics. Advocated free trade. Author of *Theory of Moral Sentiments* and *An Enquiry into the Causes of Poverty*. The *Wealth of Nations* was a searching analysis of division of labour, money, prices, wages and means of distribution.

Socrates (470-399 BC) : Greek philosopher. Master of Xenophon and Plato. Discarded metaphysical speculation in favour of practical virtues in men. Accused of poisoning the minds of young men. Condemned to death by drinking hemlock.

Solomon (947-907 BC) : Son of David and Bathsheba. King of Israel. Famous for wisdom and jurisprudence. Introduced taxation reforms. His policy of encouraging trade and mining made his country rich.

Sophocles (495-406 BC) : Greek tragic dramatist, original thinker of the traits of Oedipus and Electra complexes. Among his famous works are *Oedipus Tyrannus*, *Oedipus at Colonus*, *Electra*, *Antigone*, etc.

Spenser, Edmund (1552-1599) : Elizabethan poet; called "the poet's poet". His masterpiece is the long allegorical poem *The Faerie Queene*.

Stalin, Joseph (1879-1953) : Soviet statesman. Leader of 1917 Russian Revolution. Became head of the government in 1924 after the death of Lenin. Modernised agriculture, and in 1929, introduced Five-Year Plans, which made Russia a great industrial power.

Stephei Sequiera : Former Olympian and the first woman Arjuna Awardee. Died at the age of 62 year at Jamshedpur on September 10, 1998.

Sung, Kim Il (1912-1994) : North Korean President since Second World War when the two Koreas came into existence. Built a Stalinist-style dictatorship.

Sunga, Pushyamitra (2nd c. BC) : Brahmin Commander-in-Chief of the last Mauryan King, Brihadratha. Killed his master and founded the Sunga dynasty in 185 B.C.

Surdas (12th c.) : A blind poet. Worshipped Krishna and spread Krishna Bhakti cult. *Sur Sagar* and *Sahitya Lahari* are collections of his poems.

Sushil Muni, Acharya (1926-1994) : Founder-President of World Fellowship of Religion. Was

actively associated with Government's peace endeavours in Punjab.

Susruta (4th c. AD) : Indian surgeon. Father of Modern Plastic Surgery. Devised an artificial nose, diagnosed cataract and described hernia and medicinal value of garlic. Wrote treatises on medicine and surgery.

Syed Ahmed Khan, Sir : He was a great Muslim educationist and reformer of the 19th century. He founded Aligarh Muslim University. He was an exponent of Hindu-Muslim accord.

Syed, Ghulam Murtaza (1903-1995) : Last of the founding fathers of Pakistan, and leader of Sind. Had indomitable faith in unity of all religions and, in later years, declared his wish to atone for his "mistake of supporting the creation of Pakistan."

Tagore, Rabindranath (1861-1941) : Indian poet, novelist, patriot and philosopher. Founded Shantiniketan (now Viswabharati University) in Bengal. First Asian to receive Nobel Prize (for *Gitanjali* in 1913). Writer of National Anthems of India and Bangladesh. His works include *Gora*, *Post Office*, *Home and the World*, etc.

Tansen (1506-1589) : An exponent of Indian classical music. One of the *Nav Ratnas* in the court of Akbar.

Tata, J.R.D. (1929-1993) : The doyen of Indian industry for several years. Father of Civil Aviation in India. Recipient of Bharat Ratna, 1992, and UN Population award, 1992.

Tata, Jamshedji (1850-1940) : Parsee industrialist and philanthropist. Father of Indian industry. Founded Tata Iron and Steel Company in Bihar.

Tag Bahadur, Guru (17th c.) : Ninth Guru of the Sikhs. Was captured by Aurangzeb and put to death for refusing to become a Muslim. Real name Tyagmal.

Teresa, Mother (1910-1997) : Albanian-born nun, became a citizen of India in 1962. Founded the Missionaries of Charity dedicated to the destitutes in Calcutta. Recipient of world's top awards including 1979 Nobel Prize and Bharat Ratna 1980. The octogenarian Nobel Laureate had recently added one more award when the US Ambassador to India, conferred on her honorary American citizenship in November 1996. She was the fourth person in the world to have been conferred on the US honour—the other three being Winston Churchill, Raul Wallenberg and William and Hannah Penn.

Thyagaraja (18th c.) : South Indian saint and musician. Exponent of Carnatic music. Composer of devotional songs.

Tilak, Bal Gangadhar (1856-1920) : Indian patriot and statesman. Known as "Lokamanya". Organised with Lajpat Rai and B.C. Pal, Nationalist (or Extremist) Party. Gave the slogan "Swaraj is my birthright". Was called "Father of Indian Unrest" by the British. Founder-editor of *Mahratta* (English), and *Kesari* (Marathi). Authored *Ganharahasyam*.

Timur : A notorious Muslim warrior from Central Asia. He is remembered for his invasion and sacking of Delhi when he ordered indiscriminate massacre and plunder. His invasion had caused the end of Tughluq dynasty.

Tipu Sultan (1750-1799) : Ruler of Mysore. Succeeded his father Hyder Ali. Allied himself with the French and declared war on the English. Was defeated and killed by Cornwallis in the Battle of Srirangapatam.

Tito, Josip Broz (1892-1980) : First communist Prime Minister of Yugoslavia, 1945. Considered as Father of Modern Yugoslavia. Recipient of Order of Lenin, and Jawaharlal Nehru Award for International Understanding. He, along with Nehru and Nasser, founded the Non-Aligned Movement.

Todarmal (16th c.) : Akbar's Revenue Minister. One of the nine gems (Nav Ratnas) of Akbar's court. Famous for his land revenue reforms.

Tolstoy, Leo (1828-1910) : Russian novelist and dramatist. His novels include *War and Peace*, *Anna Karenina*, *Resurrection*, etc. Influenced the thoughts of Mahatma Gandhi.

Tombaugh, Clyde : The astronomer who discovered the planet Pluto before he even had a college degree. Died on January 19, 1997 at the age of 90.

Tope, Tantia (1814-1859) : Real name : Panduranga. Maratha patriot. Took

part in First War of Indian Independence in 1857. Nana Sahib and Rani Lakshmi Bai of Jhansi. Was defeated by General Napier's army, captured and hanged.

Toynbee, Arnold (1889-1975) : British historian. A pioneer in the field of comparative study of independent civilisations. His *A Study of History* is an analysis of the rise and fall of civilisations. His other works include *A Historian's Approach to Religion*, *Between Niger and Nile*, *Cities on the Move*, *Civilisation on Trial*, and *Surviving the Future*.

Trotsky, Leo (1879-1940) : Leader of Bolshevik Revolution in Russia. Was a lieutenant of Lenin. Differed with the party. Became a fugitive, when Stalin came to power. Was assassinated while in exile in Mexico.

Tse-tung, Mao (1893-1976) : Architect of Chinese Revolution. First Chairman of Communist Party of People's Republic of China, 1949. Instituted Great Leap Forward and raised China to the status

of a world power. Organised Red Guards to start a cultural revolution in China. His writings are collected as *Selected Works*.

Tse, Lao (604-518 BC) : Chinese philosopher; founder of Taoism. Authored *The Path to Virtue*.

Tughlaq, Mohammed bin (1325-1351) : A learned Sultan of Delhi, who had good ideas, but poor executive ability. Tried to shift his capital from Delhi to Devagiri in Deccan. Later, when he found that his subjects did not approve of Devagiri, he had to reshift his capital to Delhi.

Tulsidas (1532-1623) : Hindu religious preacher. In *Ramcharitmanas*, he has described the life story of Lord Rama.

Tunku, Abdul Rehman (1903-1990) : Malaysia's first Prime Minister. Had led Malaysia to independence from British rule in 1957.

Tyabji, Badruddin (1844-1906) : Indian national leader. First Indian Barrister of Bombay High Court. President of Indian National Congress (1887).

Uday Shankar (d. 1977) : Indian classical dancer. First dancer to perform abroad. Choreographed *Radha Krishna* with Anna Pavlova in Russia (mid 1920s). His *Kalpavriksha* (1948) is India's first ballet film, with maximum number of dance sequences.

Valmiki (800 BC) : Sanskrit poet. Author of *Ramayana*.

Varahamihira (400 AD) : Indian astronomer, mathematician and philosopher. Was one of the nine gems in the court of Vikramaditya.

Varma, Shyamaji Krishna (1857-1930) : Indian nationalist leader and founder of India Home Rule Society (1905). Organised first commemoration of Sepoy Mutiny of 1857 in 1905 at London. Instituted travel scholarships for Indian intellectuals to visit abroad. India House in London, founded by him, was a centre of revolutionary activities. Died in exile at Geneva.

Vesalius, Andreas (1514-1564) : Belgian anatomist. Known for having dissected a human body and named many of the principal organs, etc. Also showed that personality was not regulated by heart, but by brain and nervous system. Sentenced to death for stealing bodies from churchyards.

Vespucchi, Amerigo (1454-1512) : Italian navigator. Explored Venezuela and Gulf of Mexico (1507). United States is named after him as 'America'.

Victoria, Queen (1819-1901) : Queen of Great Britain (1837-1901). Empress of India. Monarch with the longest reign in British History. At the end of her life, British empire covered a quarter of the world's land surface.

Vidyasagar, Ishwar Chandra (1820-1898) : Indian social reformer and educationist from Bengal.

creating work of art. He was a
Vinci, Leonardo da Vinci (1452-1519): Italian
architect, sculptor, painter, engineer, and
inventor. He is considered one of the greatest
artists of all time. His most famous work is the
Mona Lisa.

Visvesvaraya, M. (1860-1915): Indian
engineer and statesman. He was the first Indian
to be knighted. He was also the first Indian
to be a member of the Royal Society.

Vivekananda, Swami (1862-1902): Indian
monk and philosopher. He was the first Indian
to bring the teachings of Hinduism to the West.
He was also the first Indian to be a member
of the Royal Society.

Voltaire, F.M. (1694-1778): French
philosopher, writer, and historian. He was the
first Frenchman to be a member of the
Royal Society.

Vyas, Ved (800 BC): Sanskrit
epic. It is the first of the Mahabharata.
It is a religious and moral code for Hindus.

Wadia, Ardaseer Cursetjee (1855-1927):
He was a distinguished mechanical and marine
engineer who became the first Indian fellow of the
Royal Society, London, at the age of 33.

Wallace, Irving (1916-1995): One of the most
widely read authors in the world died in Los Angeles
on June 29, 1990 at the age of 74. Among his
better-known novels are *The Chapman Report*, *The
Prize*, *The Three Sirens*, *The Miracle* and *The
Seventh Secret*.

Walpole, Robert (1676-1745): First Prime
Minister of Britain. A Whig M.P., became the
Chancellor of Exchequer in 1715. Was appointed
head of the government by George I, because of
his dexterous handling of South Sea Bubble Crisis
in 1720.

Walton, Ernest (1904-1995): Ireland's nuclear
scientist. Ushered in the nuclear age jointly with
John Cockcroft by splitting atom artificially in 1932.
Shared 1951 Nobel Prize in Physics. First Irishman
to win a Nobel Prize in Science.

Washington, George (1732-1799): American
general. Led revolt against the British and declared
American Independence in 1776. First President of
United States (1789-1797), held office for two terms.

Wang Yang-ming (1472-1529): Chinese
philosopher. He was the first Chinese to be a
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member of the Royal Society.

Maoping, Deng (Ding's paramount leader died
on February 19, 1997, at the age of 92. A great
reformer and builder, he was the last great emperor
of Chinese Communism and was the second great
figure in the history of People's Republic after Mao
Zedong, its founder. Deng was dubbed as "the
architect of modern China".

Yat-Sen, Sun (1867-1925): Founder-President
of Chinese Republic (1911-1925). Founder of
Chinese Nationalist Party (Kuomintang). Played
prominent part in 1911 Revolution of China which
brought an end to Manchu empire.

Yuan, Chen (1905-1995): The Chinese natural
leader, who for more than a decade stood as one
of the biggest opponents of the paramount leader.

Yun, Chen (1905-1995): Architect of China's
economic policies. Advocated use of market
mechanism in a socialist framework.

Zafar, Bahadur Shah (1796-1802): Last ruler
of Mughal dynasty. Fought against the British in
the First War of Indian Independence in 1857. After
his defeat, the British exiled him to Rangoon where
he died.

Zoroaster (Zarathustra) (6th c. BC):
philosopher. Founder of Zoroastrianism. He was
the first to introduce the idea of a struggle between good
and evil. His teachings are collected in the *Avesta*.

2. Persons : Present

Abdul Kalam, A.P.J. (b. 1931) : Indian scientist. Architect of Agni—India's first intermediate range ballistic missile, and Akash, India's medium range surface-to-air missile. Launched India into space age with SLV-3, an indigenous four-stage rocket.

The former Director, Defence Research and Development Organisation and presently, Scientific Adviser to Union Defence Minister known for his commitment to professional excellence and simplicity of life style, has been awarded Padam Shri, 1996 Gujar Mal Modi Science Award, 1997 Bharat Ratna and 1998 Lifetime Achievement Award for providing leadership in the development of science and technology in India. Also awarded 1997 Indira Gandhi Award for National Integration.

Ahmed, Shahabuddin : The 66-year-old former Bangladesh Supreme Court Chief Justice was sworn in as Bangladesh's 14th President in October 1996 succeeding Mr. Abdur Rahman Biswas. Played a key role in bringing back parliamentary democracy to Bangladesh in 1991. (Bangladesh's 25 years of post-independence history has been dominated by army-backed coups, violent takeovers and assassinations.)

Agassi, Andre (b. 1971) : American tennis champion. Winner of US Open tennis championship, 1994, 1999 and Australian Open, 1995.

Aggarwal, Sudarshan : Former Secretary General of Rajya Sabha has been appointed member of National Human Rights Commission (October 3, 1998).

Aggarwal, V.S. : Indian agriculturist. Recipient of 1994 Jannalal Bajaj Award for application of science and technology to rural development. Encouraged farmers in Kulp block near Calcutta to take up cultivation of high yielding paddy.

Agha Khan, Prince Karim (b. 1936) : 49th Imam of Ismailia community, a sect of Shia Muslims. Richest head of any religious sect. Educated at Harvard, he succeeded his grandfather in 1957 as the Imam of his community. Claims to be a direct descendant of Prophet Mohammad.

Ahern, Bertie : Leader of the Fianna Fail Party, who was elected the new Prime Minister of Ireland after June 1997 elections.

Ahmadi, Aziz Mushabber : Twenty-sixth Chief Justice of India — sworn in on October 25, 1994 and remained in office till March 24, 1997. India witnessed a high watermark of judicial activism during his tenure.

Akella, Jagannadhan : Indian scientist from Andhra Pradesh. Co-recipient of 1994 Weapons

Recognition of Excellence Award by the United States, for his study of Diamond Anvil Cell.

Akihito : Japan's Emperor. Ascended the Chrysanthemum Throne—world's oldest hereditary throne—on Nov. 12, 1990, after the death of his father Emperor Hirohito.

All Sardar Jafri : Noted Urdu writer, who won the 33rd Jnanpith Award for 1997 for his creative writing in Urdu (1977-1996) to the enrichment of Indian literature. Outstanding works include *Parwaz* (1943), *Khooon Ki Lakeer* (1949), *Asia Jag Utha* (1951) and *Lahu Pukarta Hai* (1978).

Ambani, Dhirubhai : Reliance Industries Ltd. (RIL) Chairman is the first Indian to be awarded the Dean's Medal from Wharton School of the University of Pennsylvania in recognition of his leadership in founding and building RIL into India's largest most widely traded and most profitable company.

Amball, Balamurali (b. 1978) : Indian student. Graduated from New York's Mount Sinai School of Medicine and became the world's youngest (17 years) medical doctor on May 19, 1995 (The average age for medical school graduates is 26 or 27.) Has co-authored two books on AIDS with his elder brother.

Amrithraj, Vijay (b. 1953) : India's tennis star. Recipient of Main Fair Play Trophy of UNESCO. Only player to win Hall of Fame Tennis thrice.

Amte, (Baba) Muralidhar Devdas (b. 1914) : Indian social worker. Known for his work among leprosy patients. Established Anand Van, a colony for leprosy patients, near Nagpur. Founder of Khat India Movement. Recipient of first G.D. Birla International Award for outstanding contributions to humanity. Also winner of Templeton, Ramon Magsaysay, Deshikottama and UN Right Livelihood Awards. Returned Padma Shri and Padma Vibhushan in 1991 in protest against ill-treatment of tribals by the M.P. and Gujarat Governments during "Save Narmada" campaign.

Anand, Dr. Adarsh Selin : The 29th Chief Justice of India who succeeded Justice M.M. Punchhi on October 10, 1998. Justice Anand's earlier assignments include Chief Justice of J&K High Court. He also authored a book, *The Constitution of J&K : Its Development and Comments*.

Anand, Mukh Raj (b. 1905) : Indian writer in English. Chairman of Lalit Kala Akademi (1955-1970). Author of *Untouchable*, *The Bubble*, *Confessions of a Lover*, *Morning Face*, *Seven Summers*, etc. Winner of Leverhulme Fellowship

(1940-1942), World Peace Council Prize (1952), Padma Bhushan (1968) and many other awards.

Anand, Viswanathan (b. 1969) : India's Grandmaster. First Indian and youngest Asian to win International Master's title (1987) and Chess Oscar 1997. First recipient of Rajiv Gandhi Khel Ratna award. Won Arjuna Award (1985), Padma Shri (1988), and K.K. Birla Foundation Award (1992). Anand scored a thrilling victory over World Champion Garry Kasparov of Russia to win the Credit Suisse Rapid Chess Tournament at Geneva on September 2, 1996 as also in 1997. He also defeated former world champion Anatoly Karpov of Russia on June 29, 1997 to annex the Hamburg Classic Rapid Chess Tournament in Germany. Annexed the Torneo Magistral Crown Madrid on May 24, 1998 with a fluent 23-move draw against world's number nine Peter Svidler of Russia to bag his third super-category title of the season.

Ananthamurthy, U.R. (b. 1933) : Kannada writer. President of Sahitya Akademi. Recipient of the 1994 Bharatiya Jnanpith Award. The youngest of the six Kannada Jnanpith awardees.

Ang, Rita: The veteran Mount Everest climber, who has conquered the world's highest peak ten times, has been granted a life-long allowance of Nepalese Rs. 5,000 every month by Nepal. The 48-year-old Sherpa, nicknamed 'snow leopard', is known for his unmatched climbing skills in local and international mountaineering circles. He rewrote a mountaineering record in May 1996 by reaching the 8,848-metre-high summit of Mt. Everest for the tenth time without using oxygen.

Annan, Kofi : The seventh UN Secretary-General, who is credited with the achievement of averting a possible military strike by Anglo-American forces on Iraq over weapons inspection issue. Selected for the Seoul Peace Prize 1998 for his contribution to world peace.

Antonioni, Michelangelo (b. 1911) : A pioneer of world cinema. Has contributed a lot to Italian cinema. His films include *The Night, Street Cleaners, Story of A Love Affair, The Cry*, etc.

Anwar, Saeed : The 29-year-old Pakistani opener etched his name for ever in the annals of cricket history, when he blasted the Indian attack for a mesmerising 194 runs in the Pepsi Independence Cup, thus outclassing Vivian Richard's score of 189, to become the highest individual scorer in one-day internationals.

Anyaoku, Emeka : The Commonwealth Secretary-General. Has ruled out any intervention by the Commonwealth in Kashmir affairs and expressed hope that India and Pakistan would resolve their differences bilaterally. Has appealed General Pervez Musharraf to restore democracy in

Pakistan within a time frame work. Meanwhile Pakistan has been suspended from Commonwealth (October, 1999).

Aparna Popat : National champion in women's badminton, became the first woman from the country to win an international ranking tournament claiming the \$10,000 French Open championship in Paris on March 22, 1998, defeating top-seeded Katja Michlowsky of Germany. Also won silver medal in the 1998 Commonwealth Games.

Arafat, Yasser (b. 1929): Chairman of Palestine Liberation Organisation since 1969. Co-founder of *Al-fatah* (1956). Signed agreements for Palestinian Self-Rule in Gaza Strip, Jericho and West Bank in May 1994 and September 1995. Recipient of Jawaharlal Nehru Award for International Understanding and Indira Gandhi Award for International Justice and Harmony. Shared the 1994 Nobel Peace Prize with Israeli Prime Minister, Yitzhak Rabin, and Israeli Foreign Minister, Shimon Peres. Concluded the land-for-peace accord with Israel getting back additional territory on the West Bank. Also signed a revised Wye-River Accord with new Israeli PM Barak.

Ariyaratne, Ahangamade Tudor: The 65-year-old social worker of Sri Lanka—popularly known as "Gandhi of Sri Lanka"—was the recipient of the Mahatma Gandhi Peace Prize worth Rs. 1 crore for 1996 which was presented to him in New Delhi on January 1, 1997.

Armstrong, Neil (b. 1930) : American astronaut. First man to set foot on the Moon on July 21, 1969. Was the civilian commander of Apollo 11 mission.

Athavale, Pandurang Shastri: The founder and leader of *Swadhyaya* movement, was named as the Templeton Award winner for 1997. The award, which carries a purse of US-\$ 1.2 million, is in recognition of his movement, which has liberated hundreds of villagers in India from the bondage of casteism and other social vices. He also won the Ramon Magsaysay Award in 1996 for Community Leadership and G.D. Birla Award 1998.

Attenborough, Richard (b. 1923): British actor-director. Known for his film *Gandhi*, which won eight Oscars in 1983.

Azmi, Shabana (b. 1951) : Indian film actress and social activist. Her debut film was *Ankur*. Winner of many national and international awards. Was adjudged Best Actress for *Patang* in 25th Taormina Arts International Festival, Italy, 1994. Involved in Nivara Haqus Samiti, dedicated to the cause of slum-dwellers. Nominated member of Rajya Sabha (1997). Heroine of controversial film *Fire*. Won the Best Actress award, for "Godmother", in the National Films Awards 1998.

Bachchan, Amitabh : The former super-star of the film industry was voted the greatest ever star of stage or screen by an international poll of users on the BBC's Internet news online service, pushing British actor Sir Lawrence Olivier and American actress Marilyn Monroe to second and ninth places respectively. The BBC which conducted the poll "Your Millen-nium" said in its release on July 1, 1999 that one of India's biggest stars even today, Amitabh Bachchan, has appeared in over 100 films in three decades.

Bachchan, Harivansh Rai: Hindi poet. Recipient of first Saraswati Samman award (1991) for his autobiographical work, *Dashdwar Se Sopan Tak*. Has also won Padma Bhushan, Sahitya Akademi award, Soviet Land Nehru Prize, Afro-Asian Writers Conference's Lotus Prize, Hindi Sahitya Sammelan's Sahitya Vachaspati and many other awards. Is father of celebrated Hindi film star Amitabh Bachchan.

Badal, Parkash Singh : Chief of the Shiromani Akali Dal, who led his party to a landslide victory in the elections to the Vidhan Sabha, was on February 10, 1997, sworn in as the 20th Chief Minister of Punjab heading a Akali-BJP Coalition Government. His party suffered serious set back in 1999 Lok Sabha elections due to split in SAD (Shiromani Akali Dal).

Bahuguna, Sunderlal: Indian environmentalist, and leader of Chipko Movement, which has been resisting construction of Tehri Dam on Bhagirathi in the Uttarakashi region of Himalayas on ecological grounds. He fears that the site of the dam is in the seismic zone and construction of the dam would spell disaster for the region.

Bajaj, Rahul : Indian Industrialist. First Indian to elected Chairman of World Economic Forum, S.

Balayogi, GMC : The 47-year-old lone TDP MP from Coastal Andhra Pradesh has the distinction of becoming the first Dalit Speaker of 12th Lok Sabha succeeding Mr. P.A. Sangma. Again elected speaker of the 13th Lok Sabha unanimously in October, 1999. Having been elected as MP thrice, Mr. Balayogi had also been Minister for Higher Education in his home State.

Bancroft, Ann : First woman to reach North Pole. Was one of the six-member US Canadian expedition which reached North Pole on dog sledge in April 1986.

Bandaranaike, Sirimavo (b.1917): World's first elected woman Prime Minister of Sri Lanka (1960). Sworn in for the third time as Prime Minister in November 1994, as her daughter, Chandrika Kumaratunga, became the President of the country.

Bardot, Brigitte (b 1934) : French film star. Became a legend with Roger Vadim's 1956 film, *And God Created Woman*. Founder of Brigitte Bardot Foundation for Animal Rights, Paris.

Barker, Pat (b. 1943) : British writer. Author of *The Ghost Road*, is the recipient of Booker Prize for 1995. Other works include *Blow Your House Down*, *The Century's Daughter*, and *The Man Who Wasn't There*. A former teacher, whose first book, *Union Street*, was published when she was 39, is the first woman to win the Booker Prize since 1990, when A. S. Byatt won it for *Possession*.

Barnard, C. Neethling (b. 1922): South African surgeon. Performed the first human heart transplant operation at Cape Town in 1967.

Bathew (nee Kharbull), Rose Millian: A Khasi tribal from Meghalaya. First woman to become Chairman of Union Public Service Commission.

Bedi, Kiran (b. 1949) : India's first woman IPS officer (1972). Was Asian Games women's tennis champion. As Inspector-General of Prisons in Delhi's high-security Tihar Jail, she brought about many reforms in Asia's biggest jail. Has won 1994 Magsaysay Award for controlling crime and improving living conditions in prisons. Also won the Joseph Beuys Prize (1997) for reform work in Tihar jail. Floated the Large Roof Concept (LARC), which envisages to help distressed women under one roof. Presently, DIG (Training) Delhi Police.

Belo, Carlos Felipe de Ximenes: The Roman Catholic Bishop of East Timor, a former Portuguese colony, is the co-recipient of the Nobel Peace Prize for his tireless efforts in promoting human rights.

Bertolucci, Bernardo (b. 1940) : Italian film director. His film, *The Last Emperor* won nine Oscars in 1978. Conferred the Lifetime Achievement Award at the 30th International Film Festival of India at Hyderabad in January 1999.

Bhatt, Ela (b. 1933) : A champion of women's rights. Has done pioneering work with the trade union of poor women from self-employed sector. Won the Magsaysay Award in 1977.

Bhupathi, Mahesh : Indian tennis player who became the first Indian to make it to the finals of a Grand Slam event. He alongwith Japan's Rika Hiraki won the 1997 French. Also won French & Wimbledon Men's Doubles 1999 along with Leander Paes and US Open Mixed Doubles 1999 partnering with Ai Sugiyama of Japan.

Bhutto, Benazir (b. 1955) : Pakistan's former Prime Minister. Was co-Chairperson of Pakistan People's Party. Sworn in as Prime Minister for the second time on October 9, 1993. First woman in the Muslim world to be Prime Minister twice. Her auto-biographical work is *Daughter of the East*. Dismissed by President Leghari on corruption

charges in November, 1996. Her party lost to Pakistan Muslim League of Nawaz Sharif in February 3, 1997 elections. Presently embroiled in a number of corruption cases. Sentenced by Lahore High Court for 4 years imprisonment on corruption charges. Presently in self-exile in UK.

Bin, Lu : Chinese swimming star. Won four gold medals in Hiroshima Asian Games. Was tested positive for using drugs and subsequently stripped of the medals.

Biswas, Upendra Nath : The 55-year-old IPS officer of the 1968 cadre, the Joint Director of the CBI, was recently in the news, for leading the investigations into the fodder scam involving the prosecution of several government officials and politicians, including the Bihar Chief Minister, Mr. Laloo Prasad Yadav and his predecessor, Dr. Jagannath Mishra. The maverick police officer from West Bengal has a doctorate in 'History of Criminal Investigation in India' and has analysed quite a few Indian classics, including *Abhijnana Shakuntalam* and *Mrichakatika*. Recently in the midst of a storm for taking military help in arresting Mr. Laloo Prasad for fodder scam.

Bjorn, Daehlie: A Norwegian athlete who created a new record at the 18th Winter Olympic Games (1998) in Nagano (Japan) by winning 12 medals, including 8 gold.

Black, Linda (b. 1959) : New Zealand's soccer star. First woman to become the referee in Men's Soccer International, which New Zealand won against Danish Olympic Games squad at New Town Park, 1995.

Blair, Tony : The Labour Party leader led his party to a landslide victory over the Conservatives to become the Prime Minister of Britain on May 2, 1997. The Labour Party under his charismatic leadership has regained power after 18 long years. At 43, he is the youngest Prime Minister of Britain since 1812, and has led the Labour Party to its biggest ever lead in the House of Commons surpassing the landslide victory of Clement Attlee in 1947. Negotiated successfully the Northern Ireland peace accord in April-May 1998.

Bob Dylan: Star performer who notched up three Grammys during the 40th Grammy Awards ceremony in New York on February 25, 1998. Known for his famous album "Time Out Of Mind".

Border, Allan (b. 1956) : Former Australian cricket captain. Declared an end to his cricket career after 16 years and a world record of 156 Test matches on May 11, 1994. Had made his Test debut against England in Melbourne in December 1978, and amassed 11,174 Test runs at an average of 50.56 in his career. Scored 27 Test centuries.

Captained his country 93 times, more often than any other Australian.

Borlaug, Norman Ernest (b. 1914): The 82-year-old Nobel Laureate, once described as the "world's greatest fighter against hunger and poverty" visited India in November 1996. He is the world's only agricultural scientist to win a Nobel Prize for Peace which was awarded to him in 1970. He is the brain behind the immensely successful Green Revolution. He is now working towards eradicating famine in Africa.

Bradman, Donald : Australia's cricketing knight. World's famous Test batsman. Retired from active cricket in the late forties, scoring as many as 117 centuries. Celebrated his 90th birthday in September 1998.

Brundtland, Gro Harlem : Twice Prime Minister of Norway and the first Chairperson of United Nations-appointed Commission on Environment and Development. Recipient of the Indira Gandhi Peace Prize and also the Third World Prize (1988) for her contribution to the field of environmental protection. First woman Director General of World Health Organisation (WHO).

Burrell, Leroy (b. 1968) : American sprinter. Broke the world record held by his teammate, Carl Lewis, in the 100 metres on July 6, 1994, trimming one hundredth of a second off the mark in winning the race in 9.85 seconds at the International Amateur Athletic Federation Grand Prix meet.

Cage, Nicolas : The 33-year-old Hollywood star, the winner of Best Actor Oscar for his role as the weary romantic suicidal alcoholic in *Leaving Las Vegas*. With Harrison Ford, Sylvester Stallone and Arnold Schwarzenegger moving into their fifties, he is being projected by movie buffs as the next macho star of the coming years.

Campbell, Kim (b. 1946) : First woman Prime Minister of Canada. A former lecturer in Political Science, she was Defence Minister before becoming Premier.

Capriati, Jennifer (b. 1976) : American tennis star. Youngest (at the age of 14) to win a match at Wimbledon (1990).

Carey, George Leonard (b. 1935) : Head of the Church of England, the mother of world Anglican community. Known as the Pope of Protestant Christianity.

Carter, Jimmy (b. 1924) : 39th President of United States (1977-81). Among his achievements are Panama Canal Treaty between Israel and Egypt, release of American hostages in Iran, and peace in Haiti. Awarded the 1997 Indira Gandhi Prize for Peace Disarmament and Develop Rs. 25 lakh and a citation.

Castro, Fidel : Prime Minister of Cuba (1959-1978). President of Cuba since 1979. Was Chairman of NAM (1979-1983). Under his leadership, Cuba emerged as the first full-fledged Socialist State in Central America.

Cate Blanchett : The Australian actress was awarded the Golden Globe for Best Actress in a Motion Picture-Drama for her role in Shekhar Kapur's directorial venture, *Elizabeth* at the 56th Annual Golden Globe Awards ceremony in Beverly Hills, in Los Angeles on January 24, 1999.

Chand, Nek : Indian sculptor. Creator of Rock Garden in Chandigarh. Has been bestowed official recognition by Punjab and Chandigarh. Honoured by France, Japan and United States.

Chandrashekhar (b. 1927) : A socialist leader. Prime Minister of India (1990-1991). Earlier was President of Janata Party. Winner of 1995 Best Parliamentary Award.

Charles, Philip Arthur George (b. 1948) : Prince of Wales and heir to the British throne. Married Lady Diana Spencer in 1981, but separated in Dec. 1992 and divorced in 1996. The couple have two sons, Prince William and Prince Harry.

Chary, Rajshekhar : First candidate to get job through reserved quota recommended by Mandal Commission. In 1994, joined National Backward Classes Financial Development Corporation as Assistant Manager.

Chaturvedi, R.S. : He is the recipient of Vyas Samman for 1996 and has written 21 books and is very good at literary criticism.

Choudhary, Bula : A long-distance Indian swimmer became the first Asian woman to cross the English Channel twice on September 2, 1999. Earlier, she crossed the channel in 1989. She accomplished the stupendous task in the early morning hours after covering the 26-mile stretch between Shakespeare Beach in England to Cap Gris Nez in France in 13 hours 15 minutes. Bula Choudhary said, "It was a big challenge for me to come back and swim after marriage and a five-year old child. It was my dream."

Chaudhary, Dilip Bahadur : Nepalese humanitarian. Winner of the 1994 Reubok Human Rights Award for his crusade against slavery.

Chavla, Kalpana (b. 1952) : The girl from Karnat in Haryana is the first Indian or Indian-American woman to go on a space launch (Nov. 19, 1997) as Mission Specialist as a member of 6-member crew on the fourth US microgravity payload flight on board Columbia on mission "STS-87" to study the outer atmosphere of sun.

Choo-Hwa, Tung : A refugee from China's 1949 Communist revolution who became a shipping tycoon, won a resounding victory to become Hong

Kong's first post-colonial leader after December 1996 elections. Was tipped to become chief executive of Hong Kong's semi-autonomous government under Chinese sovereignty on July 1, 1997.

Chelliah, Raja (b. 1922) : Indian economist. Was Chairman of National Institute of Public Finance and Policy. Headed the Tax Reforms Committee.

Chentse, Tenzin (b. 1983) : A Khampa boy from Lhasa. Coronated as 17th Karmapa-head of Rumtek Monastery in Sikkim on March 17, 1994. Succeeded Rangjung Rigpal Dorje, 16th Karmapa, the builder of Rumtek Monastery, who died in 1981.

Chidambaram, Rajagopalan : The Chairman of the Atomic Energy Commission is the recipient of the R.D. Birla Memorial award in Physics which was presented to him in Bombay on April 25, 1996 and Lifetime Achievement Award 1998. He is a specialist in condensed and high pressure Physics and crystallography and has studied in details the pervasive linearity of hydrogen bonds amino acids. India conducted 5 nuclear tests (May 11 & 13, 1998) under his stewardship.

Ciller, Tansu (b. 1945) : First former woman Prime Minister of Turkey. Leader of True Path Party, a party that champions modernity and values women's role in society.

Claes, Willy : NATO chief. Resigned in Oct. 20, 1995, a day after the Belgian Parliament voted to have him stand trial in connection with kickback scandals at home.

Clark, Arthur C. : Famous Science fiction writer living in Sri Lanka confessed to a life of paedophilia and declined Knighthood to be conferred by Prince Charles during his 1998 visit to Sri Lanka on the occasion of its 50th Independence anniversary.

Clinton, Bill (b. 1946) : Full name William Jefferson Clinton. America's Democratic Party leader. 43rd President of United States. Succeeded George Bush in 1993. Re-elected in 1996, the first Democrat to win a second term after Franklin D. Roosevelt. Began his second term in office on January 20, 1997. First American President to visit China (June 1998) after the 1979 Tiananmen square episode. Negotiated a nuclear technology deal, sale of Boeings and fertilisers, etc., worth 3.3 billion dollars to China. Embroiled in sex scandals (Monica Lewinsky and others) Later acquitted.

Clinton, Hillary Rodham (b. 1947) : First Lady of United States (1993) and a top lawyer of the country. Floated a new health-care scheme. Involved in the Whitewater Scam. According to *New York Times*, she had made a \$ 100,000 profit in one single year in the commodities market with the aid of a lawyer-friend.

Collins, Colonel Eileen : The 42-year-old astronaut became the first woman in the space history to command a space mission, when the American Space shuttle *Columbia* was launched from Kennedy space center, Cape Canaveral, Florida on July 23, 1999 carrying "Chandra" X-ray observatory. National Aeronautics Space Association (NASA) took 38 years to appoint a woman commander for a space mission.

Correa, Charles (b. 1930) : Indian architect. Among his famous constructions are Cidade de Goa Hotel, and LIC building (New Delhi). Has won many awards including the Premium Imperiale Award (1994) — a Japanese prize for contribution to the development, extension and improvement of art and culture.

Cortez, Elcira Vasquez (b. 1959) : A lawyer from Lima. First woman judge of Supreme Court of Peru.

Coyaji, Banoo Jehangir (b. 1919) : An honorary doctor with King Edward Memorial Hospital, Pune. Associated with a rural health project in 300 villages of Maval and Sirur taluqs in Pune since 1977. Recipient of Padma Bhushan (1989), Rameshwardas Birla Award (1992), and Ramon Magsaysay Award for Public Service (1993).

Crichton, Michael : American author. Writer of *Jurassic Park*, *Rising Sun* and *Disclosure*, books which have been made into films. Sued for sexual harassment by his former secretary, just before the release of the film *Disclosure*.

Crutzen, Paul : Dutch scientist. Co-recipient of 1995 Nobel Prize in Chemistry, with Mario Molina (USA), for work in atmospheric chemistry, particularly formation and deposits of ozone.

Cudjoe, Harrison (b. 1956) : Nigerian poet. Was declared International Poet of the Year, 1995, by the International Society of Poets. His award winning poem is *HIV and AIDS War*.

Cuellar, Javier Perez de (b. 1920) : Peruvian diplomat. Was Secretary-General of United Nations for ten years (1982-1991). Recipient of the 1987 Jawaharlal Nehru Award for International Understanding.

David Ho : The American scientist (by descent from Taiwan) who discovered that by administering what is called "the protease-inhibitor cocktails" to AIDS patients in the early stage of infection it is possible to eliminate the virus from the blood and other body tissues. For his remarkable achievement he was declared the Man of the Year for 1996 by the Times (December 30, 1996/January 6, 1997).

Dalai Lama (Tenzin Gyatso) (b. 1935) : The exiled spiritual leader of Tibet. Established Government-in-exile at Dharamshala (Himachal Pradesh) in 1959. Recipient of 1989 Nobel Peace Prize for his non-violent struggle to free his

Himalayan nation from Chinese rule. Also won the 1997 Paulos Mar Gregorios Award for his contribution to inter-faith dialogue. Has authored *My Land and People*, *Freedom in Exile*, etc. Presently having negotiations with Chinese authorities over Tibet's status.

Dalmiya, Jagmohan : Secretary of the Board of Control for Cricket in India (BCCI), succeeded Sir Clyde Walcott as head of the International Cricket Council (ICC) in mid-June, 97. He is the first Asian to head the ICC, which governs cricket worldwide.

Dev, Birendra Bir Bikram Shah (b. 1950) : King of Nepal. Celebrated the 25th anniversary of accession to throne on February 1, 1997. Chief Guest at the 1999 Republic Day Celebrations. Inaugurated the 8th SAF Games in Kathmandu on Sep. 25, 1999.

Devi, Kunjarani : The ace Indian weightlifter has earned the distinction of being listed among the top 100 lifters of the century in the recent issue of *World Weightlifting*, published by the International Federation of Weightlifting. Her tally of 42 medals in World and Asian contests is unparalleled in the annals of Indian sport. Recipient of 1995 Rajiv Gandhi Khel Ratna Award and K.K. Birla Sports Award 1996.

Devi, Mrs Mahasweta : The renowned Bengali writer is the winner of the 32nd Jnanpith Award for 1996, for her outstanding contribution to the enrichment of Indian literature through her creative writing in Bengali between 1976 and 1995. She is the fifth Bengali writer to receive this prestigious award. Her predecessors were Tarashankar Bandopadhyaya (1966), Bishnu Dey (1971), Ashapurna Devi (1976) and Subhas Mukhopadhyaya (1991). Also won the 1996 Ramon Magsaysay Award for Journalism, Literature and Creative Communication Arts. Also selected for the Tagore Literary Award, 1998 for her contribution in educating tribal women.

Day, Arjun Dr. : A post doctoral fellow at John Hopkins University, led a team of US scientists to trace the most distant young galaxy that existed when the universe was in its infancy.

Dolma, Dicky (b. 1974) : Belonging to Himachal Pradesh became the youngest woman to scale Mt. Everest on May 10, 1993. Was a member of India's first all-women expedition to Mt. Everest.

Edhi, Abdus Sattar (b. 1929) : Pakistani social worker. Known as Father Teresa. Founder of Edhi Foundation (1966), a social work organisation.

Edward, Robert (Ted Turner III) (b. 1938) : Creator of CNN (Cable News Network) and husband of Jane Fonda.

Elton John: Singer who shot into fame with "Candle in the Wind" at Princess Diana's funeral—Received Knighthood from Queen Elizabeth in February 1998. Also won the Grammy award (February 1998) for the best male pop vocal performance.

Ershad, Hussain Mohammad : Former Bangladesh President. Was on June 7, 1993, sentenced to seven years' imprisonment with his wife, Begum Roushan Ershad, for corruption and abuse of power. Elected to Parliament and released in January 1997.

Faruqi, Rahman Shamsur : His masterpiece in Urdu on literary criticism, *Sher-o-Shor Angez* won the Saraswati Samman of 1997. A poet, Mr. Faruqi has to his credit four books of poetry, 13 books of literary criticism—12 in Urdu and one in English—and several other important translations, reviews in Urdu and English.

Fathima Beevi, Meera Sahib : First woman judge of the Supreme Court of India (1989). First woman member of Income Tax Tribunal. Served as judge of Kerala High Court. Member of National Human Rights Commission. Appointed Governor of Tamil Nadu on Jan. 25, 1997.

Faulkner, Shannon (b. 1975) : America's first female cadet. Won the legal battle and joined the hitherto all-male U.S. Military Occupational Speciality and Submarines in August 1995.

Foreman, George (b. 1950) : Oldest heavyweight boxing champion in world history. Won the title by defeating Michael Moorer and Father Time at Las Vegas in November 1994.

Fujimori, Alberto : The ethnic-Japanese of Peru, who hogged the headlines when his commandos in a bloody swoop on April 4, 1997, rescued 71 hostages from the clutches of a leftist guerilla outfit Tupac Amaru in Lima, was in India on an official visit on May 25, 1997.

Fukunaga, Hogen : Japanese poet and writer. Winner of the 1995 Mahatma Gandhi World Peace Award for "utilising inner strength to transform the world through courage and commitment."

Gaddafi, Col. Muammar : President of Libya since 1969. Leader of the Great Revolution of September 1, 1969. His theories and ideas are contained in *Green Book*. Conferred South Africa's top award "Order of Good Hope" by the then President N. Mandela for his campaign against colonialism.

Ganesan, Sivaaji : The 69-year-old versatile and legendary actor of Tamil films was chosen for the coveted Dada Saheb Phalke award for 1996 for his outstanding contribution to the growth of Indian cinema. He is popularly known as *Natkar Tilakam* (Star Among Stars).

Gates, Bill : The 43-year-old czar of Information Technology who revolutionised the field of Infotech and co-founder and Chairman of Microsoft Corporation was named the richest man of the world with a net worth of \$90 billion by *Forbes*. He had topped the list of billionaires last year too, at \$51 billion.

Gavaskar, Sunil (b. 1949) : Popularly known as 'Little Master'. Was Indian cricket captain and opening batsman. Retired from Test cricket in November 1987. Arjuna Awardee in 1977, Padma Bhushan in 1979 and *Wisden* Cricketer of the Year 1980, his career highlights are: he is among the select band of 40 cricketers averaging over 50 runs per innings in their first class career; had maximum appearances for his country—125—106 of them unbroken sequence (also a record); scored over 10,000 runs; had maximum number of Test centuries (34); captained India in 47 Tests, breaking the 41-Test achievement of Mansoor Ali Khan Pataudi, with nine wins, eight losses and 30 draws; scored century and double century in the same Test at Port of Spain in his debut series (1970-1971); made 45 half centuries, most by any Test cricketer; has held 108 catches; highest by an Indian. Sheriff of Bombay (1995). Selected for Maharashtra Bhushan Award 1997-98 for his contribution in the field of Sports.

Gayoom, M. Abdul : President of Maldives. Chairman of SAARC (1990-1991) and (1996-97). Was Chief Guest at the 1991 Republic Day Celebrations of India.

George Mitchell : Former US Senator and Chairman of Northern Ireland's all party peace talks, who brokered peace between the rival factions after 22 months of patiently toll ending the 30-year old rift which claimed thousands killed and injured.

Ghali, Boutros Boutros (b. 1924) : First Afro-Arab to become the Secretary-General of United Nations (1992-1996). Succeeded Javier Perez de Cuellar. Was earlier Egypt's Deputy Prime Minister. He has been replaced by Kofi Annan as new UN Secretary-General.

Gharekhan, C.R. : Indian diplomat. Former ambassador to the United Nations, UN Under Secretary-General. Was presented the 1995 Man of the Year Award by *New York Times*, for his achievements in international diplomacy.

Gill, M.S. : Former Secretary in Ministry of Agriculture. Took over as Chief Election Commissioner from T. N. Seshan in December 1996. (Earlier, he was Election Commissioner).

Glenn John : The 77-year-old veteran astronaut and Ohio Senator is the oldest person to orbit the earth aboard *Discovery* on October 29, 1998. He is also the first American to orbit the earth aboard *Friendship* (February 20, 1982).

Gooch, Graham (b. 1954) : England's cricket star. First Englishman and second batsman after West Indian Brian Lara to score 1,000 first class runs. He reached the milestone by scoring 188 for Essex against Worcestershire. By scoring 8,293 runs (av. 43.87) in 107 Tests, Gooch broke David Gower's record of 8,231 runs (av. 44.25) in 177 Tests. Only cricketer in the world to post a triple century (333) and a century (123) in the same Test (against India at Lord's in 1990).

Gopalaswami, L.N. : Indian freedom fighter from Tamil Nadu. Winner of 1994 Jannatal Bajaj Award for constructive work. Ever since meeting Gandhiji in 1921, he devoted himself to Gandhiji's constructive programmes.

Gorbachev, Mikhail (b. 1931) : The first and the last Executive President of the erstwhile USSR. Resigned on December 25, 1991, formally ending the existence of the once mighty Super Power. Brought about political transformation in Eastern Europe in 1989. Known for his policies of *Glasnost* and *Perestroika*. Won Nobel Peace Prize in 1990. Leader of International Green Cross (1993), an organisation concerned with global threats to human survival.

Gowda, H.D. Deve : The leader of the United Front and former Karnataka Chief Minister was the 11th Prime Minister of India from June 1, 1996 to April 21, 1997. The son of the soil, as the 64-year-old civil engineer prides in calling himself, had waited 32 years before he got elected as Karnataka Chief Minister in November 1994. Became President of Janta Dal (Secular) following split in the party. Lost the 1999 election to Lok Sabha.

Graf, Steffi (b. 1969) : The 27-year-old German blonde won her seventh Wimbledon women's singles crown since her debut in 1984 when she beat Arantxa Sanchez-Vicario of Spain in straight sets (6-3, 7-5) at the All England Lawn Tennis Club in Wimbledon on July 6, 1996. She also won her fifth US Open title in Sept., 1996 defeating Monica Seles. The victory gave her 21st Grand Slam singles crown and her 10th career title. She also captured her fifth French Open title from Arantxa Sanchez-Vicario in the women's singles final in June 1996. Lost dismally in Wimbledon 1998 and US Open 1998. Recently retired from tennis world.

Grass, Guenter : The 71-year-old German novelist won the 1999 Nobel Prize for Literature on September 30, 1999 for his novel "The Tin Drum". He is the seventh German to win the coveted prize and the last literature laureate of Nobel Prize of the 20th century. The Swedish Academy said in its citation that "when Guenter Grass published *The Tin Drum* in 1959, it was as if German literature

had been granted a new beginning after decades of linguistic and moral destruction." By combining naturalistic detail with fantastical images and events, Mr. Guenter Grass established his reputation with *The Tin Drum*, *Cat and Mouse* and *Dog Years*, published between 1959 and 1963. Collectively known as *The Danzig Trilogy*, the novels captured the German reaction to the rise of Nazism, the horrors of war and the guilt that lingered in the aftermath of Adolf Hitler's regime. "The Tin Drum" drew attention not only to Grass' poignant and bizarre sense of humour, but also focussed attention on the anguish of war and the social and political problems the then West Germany faced before reunification. His most recent book *Mein Jahrhundert (My Century)*, published in 1999, is an attempt to summarise and make sense of the entire 20th century.

Gujjala, Ravindra (b. 1955) : An Indian from Andhra Pradesh, became the first-ever non-white Mayor of Allandsberg, a German town.

Gujral, Inder Kumar : The septuagenarian ace diplomat was 12th Prime Minister of India (April 21, 1997-March 18, 1998) succeeding Mr. Deve Gowda, in whose Cabinet he was the Minister for External Affairs. Known for 'Gujral Doctrine' which sought to build bridges of friendship with India's neighbours. Mr. Gujral has for long been a member of the Rajya Sabha. He is known for his love for Urdu poetry and modern painting.

Gupta, Indrajit : The urbane and sophisticated General-Secretary of the Communist Party of India, 77-year-old Indrajit Gupta was sworn in as India's Home Minister on June 25, 1996 in the United Front Government. India's senior most parliamentarian to win the Best Parliamentarian Award. It is Mr. Gupta's 11th term in the Parliament. He is the senior most MP.

Gupta, Sudhir : An expatriate Indian Microbiologist at the University of California. Has discovered a new virus that causes an AIDS-like disease.

Habibie, Bacharuddin Jusuf : Indonesia's new President, who was sworn in on May 21, 1998, immediately after Mr. Suharto's resignation, had been the Vice-President of Indonesia until Mr. Suharto named him as his successor. Sixty-one-year-old Mr. Habibie—a friend of Mr. Suharto since boyhood, had also served as Research and Technology Minister, agreed to UN-mandated elections in East Timor, recognised the pro-independence verdict of East Timorese referendum from October 1999 Presidential Elections. Succeeded by Mr. Abdurrahman Wahid in 1999.

Richard : New Zealand's cricket star. To capture 400 Test wickets. Retired cricket with 431 wickets in 86 Tests. da, Harry Wu (b. 1937) : Chinese-American rights campaigner. A critic of forced labour in China. Had served 20 years' imprisonment in China for being a rightist (since sentenced to 15 years' imprisonment by Chinese authorities to USA in 1995.

Margreaves, Allison (b. 1962) : A British woman, the first woman to climb Mount Everest, alone and without oxygen, on May 3, 1995. Was also the first British woman to ascend the north wall of the Eiger in the Alps in 1988 and the first person to scale the six classic north faces of the Alpine peaks in 1993.

Harsha, Indira (b. 1987) : India's first scientifically documented test-tube baby born at King Edward Memorial Hospital in Bombay on August 6, 1987.

Hasina, Sheikh Mujib-ur-Rehman : Daughter of Bangabandhu Sheikh Mujib who liberated Bangladesh from Pakistan rule in 1971—leader of Awami League and presently Prime Minister of Bangladesh. Signed the historic Ganga water sharing treaty with India and Chakma Repatriation accords with Chakma leaders. Selected for the 1998 Mahatma Gandhi World Peace Award.

Havel, Vaclav : First President of Czech Republic. Poet and playwright. Received the 1993 Ira Gandhi Prize for Peace, Disarmament and Development.

Hayden, Diana : The 24-year-old Miss India, crowned on November 22, 1997 in Mahé (Seychelles) beating 85 other contestants.

Haynes, Desmond : West Indies opener. First player in one-day cricket history to aggregate 8,000 runs while playing against Pakistan at Johannesburg in 1993. It was his 220th one-day international.

Hazarika, Bhupen (b. 1928) : India's film producer-director, composer, lyricist, folk singer and actor from Assam. Recipient of 1992 Dada Saheb Phalke Award. President of Sangeet Natak Akademi.

Heaney, Seamus (b. 1939) : Irish poet and essayist. Professor of poetry at Oxford University. Recipient of 1995 Nobel Prize for Literature. Irish to win the award after W.B. Yeats (1923) and Samuel Beckett (1969).

Henry Kissinger : The former US Secretary of State whose "Shuttle Diplomacy" during the West Asian crisis in 1973 contributed to the normalisation of the situation, broke his long silence by

recognising India's need for a deterrent against China. Pointing out that major sanctions against India for the nuclear tests it conducted "are probably a mistake", Dr. Henry Kissinger warned against the dangers of a prolonged confrontation between India and the United States.

Heptullah, Najma (b. 1942) : Indian Congress leader. Deputy Chairperson of Rajya Sabha. Elected to the Executive Council of Inter-Parliamentary Union (IPU), 1995. Re-elected to Rajya Sabha from Maharashtra in 1998 and re-elected Dy. Chairperson of Rajya Sabha. She is the first woman to be elected President of the 126-member Inter Parliamentary Union in October, 1999.

Hersh, Seymour M. : American writer. A Pulitzer Prize winner and former reporter of *New York Times*. Is the writer of *The Price of Power: Kissinger in the Nixon White House*.

Hick, Graeme (b. 1968) : Zimbabwe-born British batsman. Youngest player to register 20,000 first-class runs during Worcestershire's county championship match with Leicestershire at Worcester as he cracked an unbeaten 104, on June 13, 1993. He reached the figure at the age of 27 years and 20 days, beating the record of Wally Hammond, who had achieved it at the age of 28 years and 13 days.

Hillary, Edmund (b. 1919) : A New Zealander and conqueror of Everest (with Tenzing Norgay). Was leader of joint Indo-New Zealand "Ocean to Sky" expedition on jet-propelled boats upstream Ganga from Bay of Bengal to its source high in the Himalayas. Was New Zealand's Ambassador to India.

Hingis, Martina : Switzerland's tennis ma became the youngest Wimbledon champion of the century when she beat Jana Novotna of the Czech Republic in the women's singles final on July 1997. It was the second Grand Slam title for 16-year-old Swiss girl.

Earlier, the Swiss player became the youngest Wimbledon champion on July 8, 1996 when age of 15 years and 282 days) she and Sokova of Czech Republic won the doubles.

At 16 years, three months and Martina became the youngest Australian Open Champion in women's doubles and youngest Slam singles champion when she beat of France in Melbourne on January. By winning the 1997 US Open Championships on September 7, 1997, Hingis has Australian Open 1998, Hingis has leathers to her cap. However, she missed the 1998 French Open Grand Slam. She lost US Open 1998 and relegated ranking. She was back as world's

timings of 43.49 and 19.3, respectively, at the Centennial Olympics in Atlanta in 1996.

Johnson, Ben : Canadian sprinter. Was banned for life after he failed a second dope test on March 5, 1993. He had lost a gold medal and world record for a positive drug test at the 1988 Seoul Olympic Games.

Jospin, Lionel : Leader of the Socialist Party in France was named France's new Prime Minister on June 2, 1997 by President Mr. Jacques Chirac.

Juan Somavia : A lawyer and economist from Chile, the 46-year old Somavia is the first Director General of International Labour Organisation from a developing country succeeding Michael Hansenne of Belgium on March 4, 1999.

Kabila, Laurent-Desiré : The 56-year-old leader of the Alliance of Democratic Forces for the Liberation of Congo-Zaire (AFDL) declared himself President of Zaire on May 17, 1997, which he renamed the Democratic Republic of Congo. In a seven-month rebel movement, his rebel forces were able to overthrow Mr. Mobutu Sese Seko's Government that was ruling Zaire for the last 32 years.

Kagge, Erling : Norwegian lawyer. First person to have skied to both the Poles and climbed the world's highest mountain peak, Mount Everest, in 1994.

Kajl, Gautam : He is the first Indian to be listed as one of the Managing Directors of the Bank.

Kalashnikov, Mikhail (b. 1919) : The 80-year-old Major General, a recipient of three Orders in 1945 during Soviet era and "Service to the Motherland" decoration during the present Yeltsin-era and designer of the AK-47 assault rifle, was in India during mid April to attend a civil and defence equipment systems exhibition in New Delhi.

He produced the Avtomat Kalashnikov (AK-47) rifle in 1947, which came into service in 1951. The AK-47 is the most widely used assault rifle in the world, utilised by the armies of 55 countries, with more than 70 million copies around the globe.

Kamal Hasan : The versatile actor added another feather to his cap when he was named the Best Actor for 1996 by the Chairman of the National Feature Film Jury, Dr. T. Subbarama Reddy. This award is for his fascinating performance in the Tamil film *Indian* (whose Hindi version is *Hindustani*). In his 37-year career in films, he has bagged 15 Filmfare and 2 National awards.

Kambli, Vinod : Indian cricketer, first left-hander and third batsman (after Don Bradman and Walter Hammond) to post two consecutive double

centuries. His scoring of double centuries is the fastest in cricket history, having accomplished the feat in four Tests, surpassing Bradman's record of seven Tests.

Kapoor, Manju : A Delhi University lecturer, Ms. Kapoor won the 1998 Commonwealth Writers prize worth £1,000 for her novel, *Difficult Daughters*.

Kapur, Shekhar : The 53-year old Hindi film director who received applause for his films—*Masoom* (1983) *Mr. India* (1987) and *Bandit Queen*—won kudos for unusual treatment in directing Britain's most successful historical film, *Elizabeth*.

Karashima, Noboru (b. 1933) : President of International Association of Tamil Research. Winner of 1995 Fukuoka Asian Cultural Prize for outstanding contribution in the field of Asian studies.

Karnad, Girish (b. 1938) : Indian playwright, actor and director. Chairman of Sangeet Natak Akademi, New Delhi (1988-1993). Recipient of Sangeet Natak Akademi Award for playwriting (1972), Kamaladevi Award for the best play (*Hayavadana*) (1971), and Homi Bhabha Fellowship for Creative Work, 1970-72. Recipient of the 34th Bharatiya Jnanpith Award in January 1999.

Kasparov, Garry (b. 1963) : Soviet Grandmaster. World Chess Champion, 1993. Won Professional Chess Association World Championship after he drew with Viswanathan Anand in only 12 moves to win the contest 10.5 to 7.5 in New York on October 10, 1995. However, defeated by Blue Computer.

Kasturirangan, Krishnaswamy (b. 1940) : Chairman of Indian Space Research Organisation. A rocket payloads expert, he is the architect of India's Remote Sensing Satellite Programme. Awarded Padmabhushan in 1992, M.P. Birla Memorial Award and 1998 Life Time Achievement Award.

Kato, Yasuo : Japanese mountaineer. Is the first man to climb Everest in winter (1982).

Kaul, Swaroop Krishna (b. 1935) : Was the 17th Chief of Indian Air Force. As a fighter pilot, has a record of 3,700 flying hours to his credit. Only Air Marshal decorated with Maha Vir Chakra for bravery shown during 1971 Indo-Pak conflict.

Kaunda, Kenneth (b. 1924) : Architect of the independence of Zambia, and its first President (1964-1991). Recipient of Jawaharlal Nehru Award for International Understanding (1970).

Kesri, Sitaram : The 77-year-old senior-most Congressman, who had been the Treasurer of the All-India Congress Committee for 18 years, was elected President of the 111-year-old Congress Party and CPP leader on January 10, 1997

replacing Mr. P.V. Narasimha Rao. Was responsible for pulling down 2 United Front Governments led by H.D. Deve Gowda and I.K. Gujral by withdrawing Congress support. Replaced by Mrs. Sonia Gandhi in 1998.

Khairnar, G.R. (b. 1942) : Mumbai's Deputy Municipal Commissioner. Known for demolishing unauthorized constructions. Accused the then Chief Minister of Maharashtra, Sharad Pawar, of having close links with the Dubai-based underworld don, Dawood Ibrahim. Suspended in June 1994 for violation of service code, but reinstated on October 10, 1995, by a majority vote.

Khan, Allaiddin : Indian exponent of Hindustani music tradition, particularly of raag *Maihar*.

Khan, Amjad Ali : Indian classical musician. Sared maestro. First honorary visiting professor at the University of York. Given the first chair in Indian classical music in Britain. On October 23, 1996 appointed as UNICEF Ambassador for children from the sphere of culture and creative art.

Khan, Bismillah (b. 1916) : Indian shahnai maestro from Varanasi. Winner of Rajiv Gandhi National Sashthama Award, 1994.

Khandelwal, Rajendra : An Indian adventurer. Crippled by polio. Set a world record for the physically handicapped by reaching Khardung La Pass, the world's highest motorable road (18,320 ft) on a modified scooter in 1993.

Khatami, Seyed Mohammad : The 54-year-old clergyman won Iran's seventh presidential elections defeating Mr. Ali Akbar Naisang Nuri on May 24, 1997. Born in Ardakan, he was appointed Minister for Islamic Culture and Guidance in 1982, the post which he had to resign when President Akbar Hashemi Rafsanjani gave in to conservative pressure in 1992. After four years of political obscurity, he suddenly emerged as the joint candidate of the pro-Rafsanjani moderates and the country's neo-Leftist wing to challenge for the presidency.

Khorana, Hargobind (b. 1922) : India-born scientist. Migrated to USA. Shared the 1988 Nobel Prize in Physiology/Medicine for interpretation of genetic code and its function in protein synthesis. In 1987, awarded US National Medal of Science.

Khoshoo, Dr. Triloki Nath : The distinguished Indian scientist-cum-environmentalist, former Secretary (Environment) to the Government of India and presently working with the Tata Energy Research Institute, is the recipient of the United Nations Environment Programme Sasakawa Environment Prize for 1996 worth \$200,000 on November 30, 1996.

Kieslowski, Krzysztof : Polish film maker. Director of 1993 Golden Lion Award-winning film *Three Colours Blue* made in France. The film is the first part of a trilogy examining the principles of liberty, equality and fraternity symbolised by the colours blue, white and red in French flag.

Kirsten, Gary : The 23-year-old South African batsman, with his unbroken 188 against the U.A.E. in Wills World Cup Group B match in Faisalabad on February 16, 1996, made a new World Cup record, eclipsing Vivian Richards' 181 against Sri Lanka at Karachi in 1987.

Korl, P.W. de : Former President of South Africa. Along with Chairman of African National Congress, Nelson Mandela, was conferred the 1992 Nobel Peace Prize.

Kohl, Helmut (b. 1930) : German Chancellor since 1992. Architect of German reunification (1990). Recipient of 1990 Jawaharlal Nehru Award for International Understanding. Replaced by Gerhard Schröder following 1998 elections.

Koss, Johann Olaf : Norwegian speed skater. Recipient of 1995 Jesse Owens International Trophy. He is a triple gold medal winner at the 1994 Winter Olympics, setting world records in 1,500, 5,000, and 10,000 metres.

Krandaker, Arun : Commanding officer of VVIP squadron at New Delhi's Palam airport. Created an aviation record in 1995 by flying 6000 to 12,000 hours on various communication aspects of the Indian Air Force without a single accident in his 27 years of active flying.

Krishnamurthy, Yamini : India's renowned Brahmarajam dancer.

Kumar, Dilip : The 75-year-old maestro is the recipient of the 1994 Gada Sarao Frake award for his outstanding contribution to Indian drama. Real name Yusuf Khan, he had made his film debut with "Upar Brahm" in 1944 and topped the film world like a colossus for more than four decades, spellbinding generations with sterling performances as the "tragedy king". Also conferred the Nishan-e-imdad, the highest civilian award of Pakistan on March 23, 1998.

Kumaratunga, Chandrika (b. 1945) : Sri Lanka's eleventh Prime Minister (1994). First woman Chief Minister of the country (Western Province), and leader of People's Alliance. Her father and mother: S.W.R.D. Bandaranaike and Mrs. Sirimavo Bandaranaike—both served as Prime Ministers. On November 13, 1994, became the first woman executive President of Sri Lanka. Took over chairperson of SAARC in July 1995.

Kumble, Anil (b. 1970) : Indian leg-spinner. Became the second bowler in cricket history to bag all the ten wickets in an innings (against Pakistan in Delhi on February 7, 1999) after England's Jim Laker (1956). Joined the 100 wicket club and became the 3rd Indian to claim more than 250 wickets in Test cricket in Ahmedabad in October 1999. Was Cricketer of the Year (1993-94) with an aggregate of 71 points under the Sun-Grace-Mafatlal Awards Scheme.

Kurlen, Verghese (b. 1922) : Chairman of National Dairy Development Board, Anand (Gujarat) (since resigned). The brain behind "Operation Flood". Known as Father of India's White Revolution. Winner of World Food Prize, 1989, and Magsaysay Award, 1963. First Indian to win International Dairy Person Award, 1993.

Kuruvilla, Abraham : Indian educationist. President of Multimode Multi-Media (4M). Introduced MEDAL (Multiway Education through Distance Access Learning) in Management, a new concept in distance education.

Kutraleswaran (b. 1982) : A school boy from Chennai. Has entered *Guinness Book of World Records* by crossing six major waterways in a calendar year. He crossed Palk Strait, English Channel, two waterways of Italian Coast, Rottnest Channel in Western Australia and one more waterway in 1994.

Kwasniewski, Aleksander (b. 1954) : Polish communist-turned-social democrat. Led his party to victory in parliamentary elections in 1993. Was elected President of Poland on Nov. 20, 1995, ousting Lech Walesa.

Laden, Osama bin : Saudi dissident multi-faire who financed most of the fundamentalist Islamic movements including Taliban in Afghanistan and Sudan. Presently under Taliban protection after having been expelled from Saudi Arabia. Sought by USA for his role in bombing of US embassies in Africa (Tanzania & Kenya) resulting in US missile attacks on his hide-out in Afghanistan.

Laha, Sumita (b. 1970) : Indian national champion, adjudged the strongest woman of Asia. Holds five world records in powerlifting. Figures in *Guinness Book of World Records*. Won gold medals at the national weightlifting championships in 1993 and 1994 and at the National Games, 1995.

Lara, Brian (b. 1969) : The left-handed batting hero of West Indies. Holder of world records for highest individual score in Test and First Class cricket. In April 1994 scored 375 against England in Antigua and broke Garry Sobers world record of

365 set in 1958. On September 1, 1994, equalled Alvin Kalicharan's record of nine centuries in a season and also became the first batsman to cross 2,000 runs.

Lawton, Maxwell : South African painter. Himself an AIDS patient, his paintings *Christ Child with AIDS* and *Man of Sorrows* depict Christ as an AIDS sufferer.

Laxman, R.K. : Indian cartoonist, associated with *The Times of India*. Winner of B.D. Goenka Award for Journalism (1980-81), and Magsaysay Award for Journalism (1984). Author of *50 Years of Independence through the Eyes of R.K. Laxman*.

Lee, Brook Mahealani : The 26-year-old Miss USA was crowned the 1997 Miss Universe at Miami Beach, Florida, USA. She received a \$40,000-employment contract with the pageant, \$10,000 in cash, a \$10,000-shopping allowance and a complete swim and sportswear wardrobe for her victory. She is pursuing Master's Programme in communication at the University of Hawaii at Manoa.

Leko, Peter (b. 1981) : A Hungarian. Youngest chess Grand Master.

Lewis, Carl : He was in the news at the Centennial Olympic Games at Atlanta when he soared 8.50 metres to win his fourth successive Olympic long jump title and his ninth gold in his career.

Lewis, Edward : American biologist. Co-recipient of the 1995 Nobel Prize in Medicine, with Christiane Nüsslein-Volhard (Germany) and Eric Wieschaus (USA), for discoveries concerning "the genetic control of early embryonic development".

Linnor Abargil : The 19-year-old Miss Israel was crowned Miss World 1998 at the Miss World beauty pageant in Seychelles on November 26, 1998. Ms Abargil, who is a model, seeks to pursue a career in media communications and is an expert in jazz and classical and modern dances.

Loretton, Erhard : Swiss mountaineer. Became the third man in the world to have climbed world's 14 highest peaks, when he scaled Kanchenjunga in 1995. The other two who have achieved the feat are Reinhold Messner (Italy) and Jerzy Kukuczka (Poland).

Louise Frechette : Appointed first UN Deputy Secretary General on January 12, 1998. Formerly Canada's Deputy Defence Minister.

Lucas Jr., Robert E. (b. 1937) : American economist. Professor at the University of Chicago. Recipient of 1995 Nobel Prize in Economics for his work on "how rational expectations have

transformed macro-economic analysis and helped understand economic policy".

Lucid, Ms Shannon: The 35-year-old celebrity astronaut, who spent a record 188 days in space in 1996, became the first woman to be awarded the Congressional Space Medal of Honour (Washington : December 2, 1996). Her mission to the Russian space station *Mir* was the longest ever by a woman or an American. She returned to earth in September 1996.

Machado, Alicia: The 19-year-old law and business management student and Miss Venezuela won the Miss Universe 1996 title in Las Vegas on May 17, 1996. She has succeeded Chelsi Smith, a 22-year-old college student from Deer Park, Texas, who had the Miss U.S.A. title in 1995. She beat 78 contestants from the world. Machado is the third beauty from Venezuela to win the coveted award.

Madan, Chhavi (b. 1984) : The Delhi girl who became the youngest person to swim across the Palk Strait on March 27, 1995.

Madonna, Louise V.C. (b. 1959): World's top female pop star. In 1986, became the first woman to top both the album and singles charts. Her most popular album is *True Blue* (1986). Has authored *Sex*. She was chosen as the best actress for "Evita" at the Golden Globes Awards ceremony at Beverly Hills (California) on January 19, 1997.

Maier, Halfdon : A citizen of Denmark. Head of International Planned Parenthood Federation. Winner of 1995 UN Population Award jointly with Inter-African Committee on Traditional Practices Affecting Health of Women and Children.

Malleswari, Karnam (b. 1976) : Indian weightlifter from Andhra Pradesh. Created six national marks in the 52-kg category in 1990 Junior National Championship. Won golds in Asian Championships (54-kg category) at Pusan, Korea (1995) and in Istanbul World Championship (1994). Set a new world record by winning three golds in 54-kg category in World Weightlifting Championship at Guangzhou (China) on November 19, 1995. Awarded Rajiv Gandhi Khel Ratna Award for 1994-95.

Mandela, Nelson (b. 1918) : Leader of African National Congress, and South Africa's first Black President (1994-1999). The former saboteur and political prisoner (for 27 years from 1964 to 1990), was the only nominee to succeed F.W. de Klerk, with whom he shared the 1993 Nobel Peace Prize for negotiating the end of apartheid. Recipient of Third World Award (1986), Jawaharlal Nehru Award for International Understanding (1979), Bharat Ratna (1990), and Jamnalal Bajaj Award (1990).

Married his sweet heart Graca Machel, widow of Mozambiquan President, on his 80th birthday. Divorcing his wife Winnie Mandela. Won the Jesse Owens Global Award 1999 in recognition of his efforts to promote peace and reconciliation through sport.

Mandela, Winnie : The divorced wife of Nelson Mandela. Was Deputy Minister for Arts, Culture, Science and Technology in the Ministry of President Mandela. Sacked on charges of corruption and divorced by Mandela. Was later reinstated. Many in Africa view her as "Ma Mandela" or "Mother of South Africa".

Mangeshkar, Lata (b. 1929) : Melody queen of India. Recipient of 1989 Dada Saheb Phalke award for her contribution to Indian film music. Completed 50 years of singing in September 1992. Reputed to be world's most recorded artiste, she figures in Guinness Book of World Records. Awarded Padma Bhushan in 1969.

Manohar, Sujata Vasant : Indian lawyer. India's second woman judge of Supreme Court after Fathima Beevi (1989).

Maradona, Diego (b. 1962) : Argentine soccer star. Was banned by FIFA on August 24, 1994, from national and international competitions for 15 months for testing positive for a banned stimulant at USA '94 World Cup.

Marciano, Jacqueline Agullera (b. 1976) : The raven-haired beauty, Miss Venezuela, was selected Miss World in a beauty pageant in Sun City (South Africa) on November 18, 1995.

Marcos, Imelda : Wife of former Philippines President Ferdinand Marcos. In 1993, was sentenced for 18 years in prison on corruption charges. Lost 1998 Presidential elections.

Mariam, Mengistu Haile : Ethiopia's deposed Marxist dictator. Living in exile in Zimbabwe. Being tried *in absentia* in the Supreme Court (Addis Ababa) on charges of genocide.

Martinez, Conchita (b. 1973) : First Spaniard woman ever to capture the Wimbledon championship beating Martina Navratilova on July 2, 1994. Second Spaniard woman to reach final (after Lilli de Alvarez in 1928).

Mary Jose-Perez : The French woman athlete who scored a rare double (like Michael Johnson of USA) by winning the 400 and 200 metres at the Olympics centennials at Atlanta in 1996.

Mary McAleese : Belfast law professor is the second woman President to be elected the eighth President of Ireland to succeed Mary Robinson (the first woman President) on the latter's taking up the assignment of UN Commissioner of Human Rights (November 1997).

Mary Robinson : The first woman and seventh President of Ireland who was succeeded by another woman President, Mary McAleese, on taking up the assignment of UN Commissioner for Human Rights (November 1997). Winner of the 1998 Roosevelt Freedom award.

Mohita, Zubin (b. 1936) : India-born musician. Conductor of New York Philharmonic Orchestra and Israel Philharmonic Orchestra. Recipient of Padma Bhushan. Co-winner of Wolf Prize 1995-96 along with Rumania-born composer Gyorgy Ligeti.

Monchu, Rigoberta (b. 1959) : Guatemalan Indian leader and human rights campaigner. Recipient of 1992 Nobel Peace Prize given in recognition of her work for social justice and ethno-cultural reconciliation.

Monuhin, Yehudi (b. 1916) : American violinist. First musician to receive the peace prize of German booksellers. Recipient of Jawaharlal Nehru Award for International Understanding.

Mishra, Ranganath : Chairman of National Human Rights Commission who retired on November 26, 1996 at the age of 70. Was also the Chief Justice of India. Elected to Rajya Sabha from Orissa in 1998.

Mistry, Rohinton : The India-born Canadian writer is the recipient of the Commonwealth Writers' Prize which he shares with another Indian author, Mr. Vikram Chandra. The award was presented in London on November 13, 1996. He is the first person to win the prize twice.

Mitsuo Obo : 45-year-old Japanese adventurer who undertook solo trek across Antarctica in April 1998. First person to undertake a solo trek across frozen Arctic in June 1997.

Modi, M.C. : Indian eye surgeon from Bangalore recipient of 19th Dhanwantari Award (1990). Has performed half a million eye operations and his feat has been inscribed in the *Guinness Book of World Records*.

Mohamad, Mahathir-bin : Malaysian Prime Minister. Has been named recipient of the 1994 Jawaharlal Nehru Award for International Understanding for his role and contribution to "building closer cooperation among developing nations and for his bold and vigorous articulation of their concerns." Prime Minister of his country since 1981, Dr. Mahathir Mohamad has played the lead role in building a modern Malaysia and making it a key player not only in East Asia and ASEAN but also in the APEC and the Organisation of Islamic Countries (OIC). Awarded Jawaharlal Nehru Award for International Understanding for 1994. Visited India in December 1996.

Mohapatra, Sitakanta (b. 1941) : Oriya poet. Third Oriya writer to receive Jnanpith award (1993), after Gopinath Mohanty and Sachin Raut Roy. His major works include *Astapadi*, and *Sabdar Akash*, which won him Sahitya Akademi Award in 1974.

Moi, Daniel Arap : The Kenyan President who was elected for the fifth five-year term in January, 1998.

Moore, Mike : The former New Zealand Prime Minister, took over as the Director-General of World Trade Organisation (WTO) on September 1, 1999. Fifty-year-old Mr. Mike Moore, a former trade unionist and a committed left-winger, is scheduled to remain in the office for three years.

Mooy, Adrianus : Indonesia's ambassador to the EC has been appointed as the next head of the U.N.'s Economic and Social Commission for Asia and the Pacific (ESCAP).

Morley, Eric : The Chairman of the Miss World Organisation had monitored the entire Miss World 1996 beauty pageant held in Bangalore in November 1996. A 35,000-strong crowd had gathered at the pageant's master venue—Chinnaswamy Stadium. His wife Julia Morley, the international President of the organisation, had controlled the entire show.

Morrison, Toni (b. 1935) : Black American writer. Recipient of 1993 Nobel Prize for Literature. Author of six novels, had won 1988 Pulitzer Prize for her fiction, *Beloved*.

Mubarak, Hosni : The 71-year-old Egyptian President was re-elected on September 27, 1999 for a fourth consecutive six-year term with a massive verdict (94% votes). A leading voice in the Arab world and a prominent leader of the Non-Aligned Movement, Mr. Mubarak has been the President since his predecessor Anwar Sadat was assassinated by militants in October 1981. He is known as "the man of achievement" and a leader who has worked hard to improve the nation's economy and living conditions.

Mugabe, Robert (b. 1924) : The anti-apartheid crusader and first Prime Minister of Zimbabwe and now President of Zimbabwe. Chairman of NAM (1986-1989). Recipient of Jawaharlal Nehru Award for International Understanding (1991).

Mukhopadhyaya, Subhas : Bengali poet. Recipient of 27th Bharatiya Jnanpith Award, 1991. Had won 1962 Sahitya Akademi Award for his anthology *Jato Durel Jai*. His works include *Hungus* (1973), *Kal Madhumas* (1969), *El Bhai* (1971), *Challo Gachho Bone* (1972), *Ji Ra Kagazar Nuuka* (1989), etc.

Murdoch, Rupert (b. 1931) : American media baron. Owns a number of TV stations (including the STAR-TV), publishing concerns and also a movie company. Presently, involved in a court case in India and divorce proceedings by his wife.

Muthiah, A.C. : Elected President of the Board of Control for Cricket in India on September 21, 1999 replacing Raj Singh Dungarpur.

Naipaul, V.S. (b. 1932) : A Trinidadian novelist of Indian origin. Received knighthood in the British Government's New Year honours list. Won 1971 Booker Prize for *In a Free State*.

Nair, M.T. Vasudevan: The noted Malayalam writer and editor of *Mathrubhoomi* group of publications is the recipient of the 31st Bharatiya Jnanpith award for 1995 for his outstanding contribution to the enrichment of Indian literature. He has to his credit eight novels, 16 short story collections, one drama, two travelogues and three literary studies.

Nair, Mira (b. 1957): Indian film director. Her films include *Salaam Bombay*, *Mississippi Masala*, *Kamasutra*, etc. Won the Golden Camera Award at Cannes in 1988.

Nanjundaswamy: Indian revolutionary-agriculturist. President of Karnataka Rajya Raitha Sangha. Known for campaigns against multinationals, such as American Cargill Seeds India Company, American Kentucky Fried Chicken Chain, etc.

Narayan, Kunwar (b. 1927) : Hindi poet and writer. Recipient of fifth Vyas Samman for 1995 for his collection of poems, *Koe Doosra Naheen*, published in 1993. A pillar of "Nai Kavita" movement, he appeared on the literary scene in 1956 with his first work *Chakravayuh*. His short epic, *Atmajayi* (1965), was translated into Italian and won the Hindustani Akademi Award in 1971.

Narayan, R.K. (b. 1906) : Indian writer in English. His autobiography, *Malgudi Days*, was selected for the 1974 English Speaking Union Book Abroad Literary Award. His novel, *The Guide*, won him a Sahitya Akademi Award.

Narayanan, K.R. (b. 1921) : First Scheduled Caste to hold the country's second highest office. He was the ninth Vice President of India (1992-97) and on July 17, 1997 he got elected to the post of President of India, polling 95 per cent of valid votes cast. Mr. Narayanan is the right person for the right job, a symbol of hope for all.

A self-made man in all respects, Mr. K.R. Narayanan, himself a victim of social and economic disabilities, has climbed the success ladder making his mark in almost every field—education,

administration, international relations, economics, literature, journalism and politics. He has had close contact with India's three Prime Ministers Jawaharlal Nehru, Indira Gandhi and Rajiv Gandhi and had been with India's foreign service from its incipient stage, serving as India's envoy to Thailand, Japan, Vietnam, Burma, China and U.S.A. He was Vice-Chancellor of the Jawaharlal Nehru University and was elected to the Lok Sabha thrice from the Ottapalam constituency and was Minister in the Union Council of Ministers handling different portfolios, was conferred the Statesman of the World Award in New York in April 1998.

Nareish Goel, Dr. : The former Hony. Secy, Delhi Medical Association, was honoured with "Man of the Year Award 1998" instituted by American Biographical Institute.

Nareish Kumar : Indian Lawn Tennis player. Was non-playing Davis Cup captain. Resigned in September 1993 after India's defeat by Australia, 5-0, in semi-finals.

Nareish Trehan, Dr. : Eminent Cardiologist. First Asian to perform robotised heart surgery in his Escorts Hospital (New Delhi).

Narlikar, Jayant (b. 1938) : Indian astronomer. Director of Model Inter-University Centre for Astronomy and Astrophysics. Winner of 1981 Rashtra Bhushan Foundation Award for research into black holes and 1996 Kalinga Award of the UNESCO.

Naruhito, Prince (b. 1962) : Crown Prince of Japan and heir to the world's supposedly the oldest throne. Married the 29-year-old former diplomat, Masako Owada, daughter of Vice-Foreign Minister, Hisahito Owada, on June 9, 1993. No foreign dignitaries were invited, and Emperor Akhito and Empress Michiko did not attend because of a tradition that they do not take part in ceremonies centred on lower-ranked figures, even if be their own son.

Nasreen, Taslima (b. 1962) : Feminist writer of Bangladesh. Facing death threats at home from fundamentalists for blaspheming Koran in her maiden novel *Lajja (Shame)*. Fled to Sweden on August 10, 1994 (since returned). Winner of Sweden's literary award Kurt Tucholsky Prize (1994), named after a German writer who was killed by the Nazis. Has won Ananda Puraskar for her collection of essays *Nirbachita Column (Select Columns)*.

Nathan, Seltapan Rama : The 75-year-old ethnic Indian, born in Singapore, who is a veteran diplomat was sworn in as the Sixth elected President of Singapore on September 1, 1999, succeeding

Mr. Ong Teng Cheong. The Singapore-based *The Straits Times* daily said: "He is a good, stout-hearted man to have around, particularly in times of crisis, as his track record shows." He is the second ethnic Indian after Mr. Devan Nair to hold the position.

Navratilova, Martina (b. 1956): Czechoslovakian-born tennis player of United States. In her 20 years' career has won 167 singles titles, the highest by any player, male or female. Has won 18 Grand Slam titles—Wimbledon nine times (1978-1990) and US Open four times (1983-1987). In November 1994, bade farewell to tennis.

Nayar, Kuldip: Indian journalist. India's High Commissioner in UK during the National Front Government. Author of *India-The Critical Years, Between the Lines, Distant Neighbours, India after Nehru, The Judgement* etc. Recipient of Pride of India Award 1996. Now a nominated member of Rajya Sabha.

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Pandey, Vasudeo: The Prime Minister of Trinidad and Tobago was the Chief Guest at the Republic Day Celebrations in the Capital on January 26, 1997. He had also visited Azamgarh in U.P. In search of his roots. His great grandfather, a resident of village Lakhanpur near Azamgarh, had migrated to the Caribbean Island some 150 years ago when the British rulers sent Indian labourers to other colonies. Trinidad and Tobago was one such area.

Pandit Ravi Shankar: The 79-year-old internationally acclaimed sitar maestro was

honoured with Bharat Ratna on January 30, 1999. In June 12, 1999 in Bonn Pandit Ravji Shankar has also received the International Film and Media Music Award in recognition of his "special achievements" in enhancing the significance of music.

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Paroda, R. S. : Indian agricultural scientist. First Asian to be the Chairman of Working Group of Food and Agricultural Organisation (FAO). Director-General of Indian Council of Agricultural Research. Conferred Padma Shri in 1998.

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Patel Amrita : Chairman of National Dairy Development Board succeeding Dr. V. Khera.

Patel, Davendra Dr : An eminent medical teacher at Gujarat Cancer and Research Institute—awarded 1997 BC Roy National award.

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Paul, Lord Swraj : The leading Non-Resident Indian and Chairman of the \$500-million Caparo Group, has been appointed w.e.f. September 1, 1999, Chancellor of University of Warwick (UK). 68-year-old Lord Paul is the first Asian to head this premier university with a student strength of 25,000. The university's Vice-Chancellor, Prof. John S. Brooks hoped that Lord Swraj Paul would "both enjoy the task and bring great value and standing to the university" which is regarded as a leading light in redefining higher education in the United Kingdom. Prior to it, Mr. Swraj Paul was the

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Perl, Martin : American scientist. Co-recipient of 1995 Nobel Prize in Physics, with Frederick Raines (USA), for discovery of two sub-atomic particles, tau lepton and neutrino.

Pfaff, Anita Bose : The daughter of Netaji Subhas Chandra Bose and Ms. Emily Schenk was recently in India on the occasion of her father's birth centenary celebrations at the invitation of the Indian Government.

Phoolan Devi (b. 1960) : India's bandit queen who ruled the ravines of Chambal in the late seventies and early eighties. Shot into prominence with the Behmai massacre of 22 caste Hindus in 1981. Surrendered in 1983, incarcerated for 11 years. On Feb. 19, 1994, released on parole under the orders of Supreme Court. Shekhar Kapur's film *Bandit Queen*, is based on her life story. Embraced Buddhism at Nagpur in 1995. Elected to Lok Sabha in 1996 on Samajwadi Party ticket but was defeated in 1998 elections. However, she was re-elected in 1999.

Pinter, Harold (b. 1931) : British writer. Winner of David Cohen British Literature Prize for life-time achievement. His screen plays are *The French Lieutenant's Woman* and *The Remains of the Day*. Other plays include *The Caretaker* and *The Birthday Party*.

Pollock, Shaun : The South African cricketer made history on April 26, 1996 by taking four wickets in four balls in his debut for the England country Warwickshire against Leicestershire.

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Perl, Martin : American scientist. Co-recipient of 1995 Nobel Prize in Physics, with Frederick Reines (USA), for discovery of two sub-atomic particles, tau lepton and neutrino.

Pfaff, Anita Bose : The daughter of Netaji Subhas Chandra Bose and Ms. Emilie Schenk was recently in India on the occasion of her father's birth centenary celebrations at the invitation of the Indian Government.

Phoolan Devi (b. 1960) : India's bandit queen, who ruled the ravines of Chambal in the late seventies and early eighties. Shot into prominence with the Behmai massacre of 22 caste Hindus in 1981. Surrendered in 1983. Incarcerated for 11 years. On Feb. 19, 1994, released on parole under the orders of Supreme Court. Shekhar Kapur's film, *Bandit Queen*, is based on her life story. Embraced Buddhism at Nagpur in 1995. Elected to Lok Sabha in 1996 on Samajwadi Party ticket but was defeated in 1998 elections. However, she was re-elected in 1999.

Pinter, Harold (b. 1931) : British writer. Winner of David Cohen British Literature Prize for life-time achievement. His screen plays are *The French Lieutenant's Woman* and *The Remains of the Day*. Other plays include *The Caretaker* and *The Birthday Party*.

Pollock, Shaun : The South African cricketer made history on April 26, 1996 by taking four wickets in four balls in his debut for the England country Warwickshire against Leicestershire.

Polyakov, Valery (b. 1943) : Russian cosmonaut. Has the record of 438 days in space. He and two

other crew members landed aboard a Soyuz TM-20 about 32 km northeast of Arkalyk in Kazakhstan on March 22, 1995. Broke the endurance record of one year in space when he spent his 366th day in orbit on January 9, 1995.

Pope John Paul II: The first non-Italian Pope and the first Polish Pope (1978). He was named 1994 "Man of the Year" by the *Time* magazine for his moral courage and popularity. He is also the author of the book *Crossing the Threshold of Hope*, the first book ever written by a sitting Pope for general audience. Brought about 'thaw' in US-Cuba relations during his recent visit to Cuba. He is visiting India in November, 1999 on Government's invitation.

Powell, Colin L. (b. 1937): American General. Retired in 1993 after serving for three decades in the military. Served three Presidents. His book, *My American Journey*, set spectacular publishing records and was seen as the potential "Great Heater" set to bridge the racial divide.

Prakash Shah: Veteran Indian diplomat and formerly India's Permanent Representative at UN appointed (1998) UN Secretary-General's special envoy in Baghdad to stave off any major misunderstanding between Iraq & UN. Since resigned under US pressure.

Pran (b. 1938): A creative writer of children's comics. His most popular character is *Chacha Choudhury*. Two of his episodes are on display at International Museum of Cartoon Art, Florida, USA.

Prasad, Venkatesh: He is a noted Indian cricketer who won the Cooat International Cricketer of the Year Award for 1996-97.

Premji, Azim Hasham: The Chairman of the Wipro Corporation has been named by *Forbes* the richest Indian in the world with a personal fortune of \$2.8 billion (Rs. 12,040 crore). He runs his Infotech company and other businesses including soap, fluid power and medical systems from a sparse office on M.G. Road in Bangalore. By the 1990s, Wipro was one of India's biggest Infotech companies, hugely popular on the bourses with he and his family owning over 75 per cent of the stock.

Presser, Larry: US Republican Senator. His 1985 amendment, known as Presser Amendment, led to a cut in US military and economic aid to Pakistan in 1990. Was critical of President Clinton's military package to Pakistan in 1995, waiving his 1985 Amendment, on the grounds it could disturb peace in the sub-continent, undermine economic progress in South Asia, launch a nuclear arms build-up and raise the prospect of nuclear weapons falling into the hands of terrorists. Lost 1996 elections.

Pritam, Amrita (b. 1919): Punjabi poetess and novelist. Recipient of Bharatiya Jnanpith Award 1981.

Qurratul-ain-Haider: Urdu novelist, short story writer and translator. Popularly known as Ain Apa. Emigrated to India from Pakistan in the late 1950's. Recipient of 25th Bharatiya Jnanpith Award (1989), for outstanding contribution to Indian literature between 1969 and 1983.

Rai, Aishwarya (b. 1974): Indian student of architecture from Mumbai. Crowned Miss World at Sun City, Johannesburg, in November 1994. Second Indian to hold Miss World title (the first being Reita Faria, 1966), and third Indian to win a world beauty contest (the second being Sushmita Sen, "Miss Universe" 1994). Aishwarya has since joined the silver screen world.

Raj Kumar, Dr.: The 67-year old, veteran Kannada actor is the recipient of the prestigious Dada Saheb Phalke Award for the year 1995 for his outstanding contribution to Indian cinema. In a career spanning 40 years, Dr. Raj Kumar, who is a household name in Karnataka, has acted in over 200 films. He has also been the recipient of Padma Bhushan and Karnataka Rathna awards.

Rakesh Gangwal: He is the first Indian to be appointed to the high post of Chief Executive of US Airways.

Ram, Kanshi (b. 1922): Indian socialist. A champion of lower castes, and socially backward classes. Founded Bahujan Samaj Party (1984), which has emerged as a strong force to reckon with. Lost 1998 election to Lok Sabha. Elected to Rajya Sabha from U.P. in 1998.

Ramanna, Raja (b. 1926): Indian nuclear scientist. Chairman of Atomic Energy Commission (1984). Responsible for designing and building the nuclear reactor at Trombay in 1954. Was head of the Department of Atomic Energy when India conducted the nuclear test in Pokhran in 1974. A former Minister of State in the National Front Government. Recipient of Ashutosh Mookerjee Memorial Award 1996-97.

Ramgoolam, Navinchandra: Prime Minister of Mauritius was in the news when he visited India in August 1996 and he was also the Chief Guest at Independence Day Function.

Rana, Jaspal (b. 1977): Indian shooting champion. Second Indian to win an individual gold in shooting in Asian Games, 1994, the first being Randhir Singh, at the Bangkok Asiad in 1978. At the Victoria Commonwealth Games he had won two golds, one silver and one bronze. First Indian to win world standard pistol junior championship at

Milan (1995). However, fared miserably at the 1996 Atlanta Olympics. Leader of Indian contingent to the 16th Commonwealth Games (Kuala Lumpur, September 1998) where he won 2 gold and 1 silver for the country.

Rangarajan, Chakravarthi (b. 1934): Indian economist. Governor of Reserve Bank of India. Was a member of Planning Commission, and also Deputy Governor of RBI. Now Governor of A.P. and Orissa.

Rao, Akkineni Nageswara (b. 1928): Doyen of Telugu cinema. Winner of 1990 Dada Saheb Phalke award for outstanding contribution to cinema.

Rao, S.R. : Former Municipal Commissioner of Surat who got his name entered in *Limca Book of Records* for cleaning and transforming the city after plague out-break.

Rao, U.R. (b. 1933) : Indian scientist. Former chairman of Space Commission and Indian Space Research Organisation. Responsible for launching first Indian satellite, *Aryabhata*, in 1975. Recipient of Vikram Sarabhai International Award, 1996.

Rath, Ramakant : Oriya poet and writer. Recipient of Saraswati Samman, 1993. His writings, spread over four decades, have supplied dominant idiom of new poetry in Oriya.

Ratnam, Mani : Indian film director. Known for his controversial blockbuster *Bombay* (produced in Hindi, Tamil and Telugu). The film is the first ever to be produced on the fallout of Babri Masjid demolition with *Bombay* as the backdrop. His other films are *Mouna Ragam*, *Roja*, etc.

Ray, Kuber Nath : Hindi writer and scholar of Vedic literature, Indian culture and mysticism. Recipient of tenth Moortidevi award, 1993, for his essay collection *Kama Dhenu*.

Reagan, Ronald (b. 1917) : President of America (1981-88). Was Governor of California (1967). He was also a film star and television artiste. Now struck with deadly Azhmeir disease.

Reddy, Madhurima : A 14-year-old girl from Anantpur, a small town in Andhra Pradesh who developed bio-pesticide from custard apple seeds, won the third prize in the bio-chemistry category at the International Science and Engineering Fair ISEF '99 in Philadelphia (USA). Madhurima Reddy, one of the four students (between age 14 and 18) representing India at the ISEF '99, received elicitations and a scholarship for further research to develop her project. Her discovery is a boon for cotton farmers in India who often suffer from crop failure due to pests.

Reddy, Raj : A highly distinguished Indian-American engineer was appointed by the US

President, Mr. Bill Clinton to serve as a co-chair of the President's Information Technology Advisory Committee (PITAC) on September 1, 1999 for a 2-year-term alongwith Mr. Irving Wladawsky, a physicist. Mr. Raj Reddy, an engineering graduate from University of Madras, has been a member of the PITAC since February 1997. Winner of several awards, including the Legion of Honor awarded by President Mr. Francois Mitterrand of France in 1984, Mr. Reddy obtained his Master's Degree in Technology from the University of South Wales, Australia and his Doctorate Degree from Stanford University, California.

Reines, Frederick : American physicist. Professor at the University of California. Co-winner of 1995 Nobel Prize in Physics, for detection of neutrino.

Rene, France Albert : Seychelles President since 1977. Ousted the Island's first President, James Mancham, in June 1977. Seychelles gained independence from Britain in June 1976.

Richard Seed : US scientist who has announced plans to clone human beings.

Rizvi, Abidul Hasan : Pak Officer—winner of the 1998 Ramon Magsaysay Award for Government Service.

Rosamma, C.A. : Indian agricultural scientist from Kerala. Winner of 22nd International Rice Research Institute Award given by the Philippines.

Rotblat, Joseph : British physicist and anti-nuclear campaigner. Founder-Chairman of Pugwash Conference on Science and World Affairs. Co-Recipient of 1995 Nobel Peace Prize with Pugwash Conference on Science and World Affairs (London), for work "to diminish the part played by nuclear arms in international politics."

Roy, Arundhati : The internationally renowned and best-selling celebrity author of Booker Prize winner, *The God of Small Things*, donated her entire proceeds of the award—approximately Rs. 15 lakh—to support the tribals, who will be displaced by the Sardar Sarovar Dam in the Narmada Valley sub-sequent to her visit to the Narmada Valley in April this year.

Roy, Pratibha : Oriya writer. First woman to receive Moortidevi Award (1992) for her novel *Yajnaseni*. Her another novel, *Aparajita*, has been made into a film and also won an award for the story.

Rubik : An Hungarian, known for Rubik's Cube, which was declared the Game of the Year in 1980.

Ruggiero, Renato (b. 1931) : Italian diplomat and business executive. Director-General of World Trade Organisation (WTO) 1995-1999.

with PM Vajpayee as also of Kargil war with Pak Army Chief Pervez Musharraf who has deposed and interned him (October, 1999). Faces death penalty for treason.

Sharma, Rakesh (b. 1954) : Patiala-born Indian test pilot. World's 138th and India's first cosmonaut to go into space on April 3, 1984. Together with two Soviet cosmonauts, he soared into space aboard Soyuz T-11 from Baikonour cosmodrome for a historic rendezvous with Salyut-7.

Shastri, Ravi (b. 1963) : Indian cricketer holding world records for the fastest double century in first class cricket (200 not out in 113 minutes and of 123 balls against Baroda in Ranji Trophy, 1984) and for hitting six sixes in one over. He was made UNICEF ambassador in 1996 to work for children.

Shiraishi, Kojiro (b. 1968) : A Japanese. Youngest to sail around the world non-stop and alone in 1994. He travelled via Cape Horn in Chile, Cape of Good Hope in South Africa and eastern coast of Australia.

Shiva Keshavan : The sole Indian to compete in 1998 Winter Olympics at Nagano (Japan). With no sponsorship, no government support, no national training and no equipment but a borrowed sledge, this 16-year old boy from a small village in India stood second among Asian competitors next to Japan in the singles competition obtaining 28th position.

Shiva, Vandana (b. 1953) : Indian environmental activist. Recipient of Right Livelihood Award for 1993, which she shared with four other women's groups.

Shourie, Arun (b. 1947) : Indian journalist and former editor of *Indian Express*. Recipient of Padma Bhushan (1990) and Ramon Magsaysay Award for journalism, literature and creative communication arts (1982). Embroiled in a controversy for his book *Worshipping False Gods*. Elected to Rajya Sabha in 1998 from UP.

Sihanouk, Norodom (b. 1924) : King of Cambodia, 1993. Ruler of Cambodia (1941-1970). Overthrown in a U.S. backed military coup. Returned as Head of State during the Khmer Rouge regime in 1975-79. In 1979, fled the country ousted by Vietnamese troops. After 13 years of exile, returned to Phnom Penh in 1991. Elected President of Cambodia.

Singh, Harbhajan (b. 1920) : Punjabi poet. Recipient of 1994 Saraswati Samman for his contemplative long poem, *Rukh te Rishi*.

Singh, K.S. (b. 1935) : Indian anthropologist. Was Director of Anthropological Survey of India (1976). As Vice-Chancellor of Ranchi University (1980), he set up the first department of tribal and

regional languages in India. His *magnum opus*, *The People of India*, is the largest ethnographic study in the world.

Singh, Khushwant (b. 1915) : Indian journalist and writer. Was editor of many newspapers and weeklies. Was a nominated member of Rajya Sabha. His autobiographical work is *Truth, Love and A Little Malice*. Other works include *Punjab Tragedy*, *Indira Gandhi Returns*, *Train to Pakistan*, *History of the Sikhs*, etc. Won the 1997 Mondello Award and Honest Man of the Year Award 1998, instituted by Sulabh International.

Singh, Manmohan : Indian economist Union Finance Minister (1992-96). Winner of 1993 Finance Minister of the Year Award by Euromoney for his economic policies and "Honest Man of the Year" 1996 award for his economic policies and clean public life. Leader of the Congress Party in Rajya Sabha.

Singh, Paramjit : The 26-year-old Police sprinter shattered 'Flying Sikh' Milkha Singh's 38-year-old national 400 metres record by running a sensational 45.70 seconds to steal the thunder on the second day of the 38th Open National Athletics in Calcutta on November 4, 1998.

Singh, Tavlin : The London-based percussionist became the first Asian to win the prestigious Technics Mercury Music Award, the musical equivalent of the Booker Prize in London on September 8, 1999 for his album OK. Tavlin Singh's music is a fusion of Indian Classical Music with the contemporary British dance melody.

Singh, Vishwanath Pratap (b. 1931) : Indian politician. Leader of Janata Dal. Seventh Prime Minister of India (1989-1990). Crusader for social justice; implementer of Mandal Commission Report which has unfortunately injected casteist politics in the country as also job reservations without merit.

Singhanla, Vijaypat (b. 1940) : Chairman of Raymonds Group. First Indian to participate in and win the 34,000 km international Round the World Air Race, 1994.

Sivan, Santosh : This Indian film-maker catapulted India on centre-stage by winning all the major awards at the 22nd Cairo Film Festival which concluded on December 7, 1998. His National Award winning film *The Terrorist*, loosely inspired by Rajiv Gandhi's assassination, bagged the Golden Pyramid for the best film, best director and best actress for Ayesha Dharker. Sivan's film probes into the psychology of a suicide bomber and terrets out stray nuggets of humanity in the sea of hatred that has suffused the assassin's psyche. *The Terrorist* has also been included in '1'

Indian Panorama section for the International Film Festival opening in Hyderabad on January 10, 1999.

Sivaramakrishna Chandrashekhra: Director of Liquid Crystal Research Centre at Bangalore, conferred the Niels Bohr Gold Medal for his work on liquid crystals.

Solzhenitsyn, Alexander (b. 1918): Soviet dissident writer. Survived war, prison and cancer to win 1970 Nobel Prize for Literature. Expelled from Soviet Union in 1974 for exposing the terror of Soviet rule in his books. Returned home in 1994. Works include *The Gulag Archipelago*, *The Cancer Ward*, *The First Circle* and *One Day in the Life of Ivan Denisovich*.

Sonia Gandhi (b. 1946): Widow of former Indian Prime Minister, Rajiv Gandhi who jumped in the political arena 7 years after her husband's assassination, star campaigner of Congress in 1998 assembly elections and 1999 Lok Sabha elections. President of Congress and Leader of CPP Won 1999 Lok Sabha election from Bellary (Karnataka) & Amethi (UP).

Sorabjee, Soli J. (b. 1930): Nominated as Prosecutor of International War Crimes Court for the former Yugoslavia by the UN Secretary-General Boutros Boutros Ghali (1993). Was Attorney General and Solicitor-General of India. Reappointed Attorney-General of India on November 1, 1999 for a period of three years.

Spielberg, Steven (b. 1947): Film director. His famous films are *Jaws* (1975), *Close Encounters of the Third Kind* (1978), *Raiders of the Lost Ark* (1982), *ET: The Extra Terrestrial* (1983), *Jurassic Park* (1993). Won many awards including seven Oscars for *Schindler's List* (1994). Awarded Germany's highest civic award "The Cross with Star of the Order of Germany".

Srinivas, Uppalapu (b. 1970): India's mandolin player. Youngest to receive *Asthana Vidwan* title (1990).

Strasser, Valentine (b. 1968): President of Sierra Leone. At 27, he was world's youngest Head of State.

Suarez, Ramon Balanco (b. 1934): A Venezuelan. Climbed Mount Everest on October 5, 1993, to become the oldest man to reach the world's highest peak. He broke the record set in 1985 by Dick Bass, a Dallas oil magnate, who had scaled Mount Everest when he was 55.

Subbulakshmi, M.S. (b. 1919): Indian exponent of classical and non-classical music. Had the honour of reciting devotional songs during the Silver Jubilee celebrations of UN in 1970. Recipient of Kalidas

Samman for classical music and theatre (1988-89), Padma Vibhushan and Magsaysay Award (1974) as also the India's prestigious highest civilian award in 1997—Bharat Ratna.

Subramanian, C.: The veteran 88-year old Gandhian and freedom fighter, member of Constituent Assembly and former Union Minister for Finance, Defence, Steel & Heavy Industry and Agriculture who played a key role in bringing the agricultural prosperity during late 1960's. Recipient of Bharat Ratna, 1998.

Subramanyam, K.: Expert Defence analyst and an ardent critic of National Security set up, has been appointed Convener of National Security Advisory Board.

Subramanyam, Shobha: The Managing Director of the Anand Bazar Patrika Group of Publications, (ABP) was elected President of the Indian Newspaper Society (INS) for 1999-2000 (Bangalore : September 20, 1999.) succeeding Mr. Mammen Mathew of Malayala Manorama. A graduate from Calcutta University, she joined ABP Group in 1979 and rose to become its Managing Director in August, 1999. She is also the Chairperson of United News of India (UNI) and a member of the Asian Committee of IFRA, the Germany-based International newspaper association.

Sudarshan, E.C.G. (b. 1931): Indian physicist. Advanced the theory of V-A (left-handed) current. Known for his theory on "tachyons".

Sullivan, Kathy: American astronaut. Became America's first woman spacewalker on October 11, 1994, when she floated outside the shuttle *Challenger* with a male colleague to test tools and techniques for refuelling spent satellites.

Sultanpuri, Majrooh: Hindi film lyricist. First film lyricist to be honoured with Dada Saheb Phalke Award, 1993. Recipient of 1991 Igbal Samman.

Sunil Dutt: The actor-turned politician, who has been Member of Parliament thrice and works for the promotion of social harmony, was conferred the Lifetime Achievement Award at the Screen-Videcon awards ceremony in Mumbai on January 16, 1999.

Sushil Kumar, Admiral: Took over as India's Naval Chief on December 30, 1998.

Suraksha Shankar Yadav: The first lady locomotive driver in the country.

Suu Kyi, Aung San (b. 1945): Myanmar's pro-democracy opposition leader. Daughter of Myanmarese Independence hero, General Aung San. Founded Myanmar's National League for Democracy. Was under house arrest since 1989. Freed in 1995 unconditionally. Recipient of Nobel

Peace Prize (1991), Sakharov Prize for "Freedom of Thought" (1991), Solidarity Prize of the City of Bremen, and Jawaharalal Nehru Award for International Understanding (1993).

Swaminathan, M.S. (b. 1925) : Indian agricultural scientist. Was Director General of International Rice Research Institute, Manila. Director of Centre for Research on Sustainable Agriculture and Rural Development, Madras. Architect of Green Revolution. Recipient of Albert Einstein World Science Award, 1986. First Indian to receive World Food Prize (1987). Recipient of United Nations Environment Programme Sasakawa Environment Prize for 1994 for his efforts over 40 years in the conservation of biological diversity. Also selected for Volvo Environment Prize for 1999.

Tabai, Junko : A Japanese housewife, the first woman to climb Mount Everest on May 16, 1975.

Tarar, Rafiq : The 68-year-old former Supreme Court judge, has been elected the 9th President of Pakistan following resignation of President Leghari. Criticised as a rigid Islamist and a "puppet" of PM Nawaz Sharif, Tarar is a member of Pakistan's Tableeghi Movement devoted to preaching Islam worldwide.

Tendulkar, Sachin : Scored yet another century at Hyderabad against New Zealand. Now his total tally is a World record of 24 centuries in One-Dayers as on November 17, 1999. He has also scored 21 Test Centuries including one Double Century (217). Received the Rajiv Gandhi Khel Ratna Award for 1997-98. He is India's highest scorer in One Day Internationals (186). He also has the credit of scoring highest number of runs (523) in a single World Cup.

Thagat, Avtar Tufsi : The 14-year-old genius whom the court allowed permission to appear in all three years of B.Sc (Physics) examination simultaneously held by Patna University. He passed out in 1998.

Tendulkar, Vijay : Marathi screen-play writer and journalist. Doyen of *avant garde* Indian theatre. Recipient of K.K. Birla Foundation's Saraswati Samman award for his play *Kanyadaan*.

Tereshkova, Valentina : Soviet cosmonaut. First woman to make a space flight aboard Vostok-VI in June 1963.

Thagard, Norman : First American on board Russian space station, *Mir*, with Commander Vladimir Dezhurov and engineer Grenady Strekalov.

Thakre, Kushabhau : Veteran BJP leader, presently President of BJP succeeding L.K. Advani.

Tharoor, Shashi : Acclaimed author-Executive Assistant to UN Secretary General, Kofi Annan—was recently appointed UN Director of Communication with the responsibility of coordinating messages that it puts out to the public.

Thatcher, Margaret (b. 1925) : Prime Minister of Britain (1979-1990). First woman Prime Minister in modern Europe and first British Prime Minister of this century to successfully contest three consecutive general elections. Known as "The Iron Lady" for her strong policies, particularly for her military victory against Argentina in the Falkland Islands. Author of *Path to Power*.

Tipnis, Air Chief Marshal Anil Yeshwant : Took over as India's new Air Chief on December 31, 1998.

Tohra, Gurcharan Singh : The 82-year-old senior Akali Dal leader, Mr. Gurcharan Singh Tohra was unanimously elected President of the Shiromani Gurdwara Prabandhak Committee for the record 25th time. He was first elected President in 1973. Now elected to Rajya Sabha from Punjab. Has floated a break-away Akali Party after differences with Punjab Chief Minister.

Tom Whittaker : The handicapped US climber, who lost his right foot in a car accident 19 years ago, became the first disabled person to scale Mount Everest in his third attempt on 27, May 1998.

Tully, Mark (b. 1932) : Asian correspondent for BBC. Resigned in 1994 after serving for 25 years. Has authored *No Fullstops in India*.

Tutu, Desmond (b. 1931) : First black Anglican Bishop of Johannesburg. Advocated peaceful resistance to apartheid. Won 1984 Nobel Peace Prize and 1998 Roosevelt Freedom Award.

Tyson, Mike (b. 1967) : Heavyweight champion. In 1986, was the youngest man ever to win the world heavyweight crown. Returned to the ring in 1995 after four years' jail term. In his debut match in August 1995, defeated Peter McNecly in 89 seconds at Las Vegas.

Uemura, Kenji (b. 1946) : A Japanese. First man to reach the North Pole across the frozen Arctic Seas.

Usha, P.T. (b. 1964) : Indian athlete. Created many records in the Xth Asian Games, Seoul. First Indian woman to reach the final of an Olympic event (400m. hurdles).

Vaclav, Havel : Czech playwright. Leader of Civil Forum Movement. In 1986, his books were banned in East Europe as he criticised the communist regimes. Elected President of Czechoslovakia (1989). After Czechs and Slovaks formed independent states in 1993, he became President

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Constituent Assembly and former Union Minister
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Tendulkar, Sachin : Scored yet another century at Hyderabad against New Zealand. Now his total tally is a World record of 24 centuries in One-Dayers as on November 17, 1999. He has also scored 21 Test Centuries including one Double Century (217). Received the Rajiv Gandhi Khel Ratna Award for 1997-98. He is India's highest scorer in One Day Internationals (186). He also has the credit of scoring highest number of runs (523) in a single World Cup.

Tathagat, Avtar Tuli : The 14-year-old genius whom the court allowed permission to appear in all three years of B.Sc (Physics) examination simultaneously held by Patna University. He passed out in 1998.

Tendulkar, Vijay : Marathi screen-play writer and journalist. Doyen of *avant garde* Indian theatre. Recipient of K.K. Birla Foundation's Saraswati Samman award for his play *Kanyadaan*.

Tereshkova, Valentina : Soviet cosmonaut. First woman to make a space flight aboard Vostok-VI in June 1963.

Thagard, Norman : First American on board Russian space station, *Mir*, with Commander Vladimir Dezhnev and engineer Grenady Strekalov.

Thakre, Kushabhau : Veteran BJP leader, presently President of BJP succeeding L.K. Advani.

Tharoor, Shashi : Acclaimed author—Executive Assistant to UN Secretary General, Kofi Annan—was recently appointed UN Director of Communication with the responsibility of coordinating messages that it puts out to the public.

Thatcher, Margaret (b. 1925) : Prime Minister of Britain (1979-1990). First woman Prime Minister in modern Europe and first British Prime Minister of this century to successfully contest three consecutive general elections. Known as "The Iron Lady" for her strong policies, particularly for her military victory against Argentina in the Falkland Islands. Author of *Path to Power*.

Tipnis, Air Chief Marshal Anil Yeshwant : Took over as India's new Air Chief on December 31, 1998.

Tohra, Gurcharan Singh : The 82-year-old senior Akali Dal leader, Mr. Gurcharan Singh Tohra was unanimously elected President of the Shiromani Gurdwara Prabandhak Committee for the record 25th time. He was first elected President in 1973. Now elected to Rajya Sabha from Punjab. Has floated a break-away Akali Party after differences with Punjab Chief Minister.

Tom Whittaker : The handicapped US climber, who lost his right foot in a car accident 19 years ago, became the first disabled person to scale Mount Everest in his third attempt on 27, May 1998.

Tully, Mark (b. 1932) : Asian correspondent for BBC. Resigned in 1994 after serving for 25 years. Has authored *No Full Stops in India*.

Tutu, Desmond (b. 1931) : First black Anglican Bishop of Johannesburg. Advocated peaceful resistance to apartheid. Won 1984 Nobel Peace Prize and 1998 Roosevelt Freedom Award.

Tyson, Mike (b. 1967) : Heavyweight champion. In 1986, was the youngest man ever to win the world heavyweight crown. Returned to the ring in 1995 after four years' jail term. In his debut match in August 1995, defeated Peter McNeely in 89 seconds at Las Vegas.

Uemura, Kemi (b. 1946) : A Japanese. First man to reach the North Pole across the frozen Arctic Seas.

Usha, P.T. (b. 1964) : Indian athlete. Created many records in the Xth Asian Games, Seoul. First Indian woman to reach the final of an Olympic event (400m. hurdles).

Vaclav, Havel : Czech playwright. Leader of Civil Forum Movement. In 1986, his books were banned in East Europe as he criticised the communist regimes. Elected President of Czechoslovakia (1989). After Czechs and Slovaks formed independent States in 1993, he became President

of Czech Republic. Winner of 1993 Indira Gandhi Prize for Peace, Disarmament and Development.

Vajpayee, Atal Behari : The Prime Minister of India whose coalition government was abruptly toppled by just one vote following withdrawal of support by BJP ally Ms. J. Jayalalitha of AtADMK after 13 months rule, secured the people's verdict to retain the Prime Ministerial post. Under Mr. Vajpayee's leadership, the BJP-led National Democratic Alliance won a comfortable majority in the 13th Lok Sabha. He took oath of the office on October 13, 1999 for the third time.

Venkataraman, R. (b. 1910) : President of India (1987-1992). Was Vice-President from 1984 to 1987.

Venugopal, P. : Indian doctor. Head of Cardio-Thoracic Vascular Surgery Department of All-India Institute of Medical Sciences (AIIMS), New Delhi. Conducted India's first heart transplant operation on August 3, 1994.

Walesa, Lech (b. 1943) : First popularly elected Polish President (1990). Was a shipyard electrician, led the shipyard strike that created Solidarity, the East Bloc's first independent trade union. Played a major role in overthrow of Poland's communist regime. Won 1983 Nobel Peace Prize.

Wendy Fitzwilliam : Miss Trinidad and Tobago, Wendy Fitzwilliam, 25, representing her nation of two small islands off the Venezuelan coast, became the 47th Miss Universe on May 12, 1998, at the Miss Universe pageant, staged at the University of Hawaii's Stan Sheriff Centre. Fitzwilliam, who holds a Bachelor of Law degree, competed with 80 other entrants in the Miss Universe Pageant. When asked if she was named Miss Universe, what she would do, Fitzwilliam replied ; "My goal would be to impress upon women by my example that their struggle should not be for superiority over men but for equality to fulfil our God-given task of bringing up children, the future of the human race together."

Wilmut, Ian : The 52-year-old embryologist at the Roslin Institute in Scotland is the laboratory father of Dolly the sheep, history's first cloned adult mammal. His team took a single cell from the udder of a sheep and turned it into a viable embryo, mating it with an unfertilised egg implanted in a surrogate mother. The result was Dolly.

Wolfensohn, James D. : An international investment banker. Became President of World Bank on June 1, 1995. Re-appointed in 1999.

Xioutin, Ji : Chinese scholar of Sanskrit. Professor at Beijing University. Translated Valmiki Ramayana into Chinese.

Yadav, Santosh (b. 1969) : Deputy Superintendent in Indo-Tibetan Border Police, only woman in the world to climb Mount Everest (8,848 metres high) twice, along with Cathay O'Dowd of South Africa. She had reached the peak first on May 10, 1992. In 1993, the same day, she reached the peak again along with Kunga Bhutia and Dicky Dolma. Conferred the 1996 K.K. Birla award for Sports.

Yanni : The Greek-born American composer and key-board player, mesmerised Indian audience at the Taj with his scintillating performance. This concert was a part of the 50th anniversary celebrations of Indian Independence.

He dedicated all the revenue accruing from sponsorship and television rights to the newly-founded Agra Heritage Fund, a non-profit organisation to look after the Taj Mahal.

Yeltsin, Boris (b. 1931) : Russian President (1991). First popularly elected leader of Russia. He was re-elected as President in 1996.

Zhirinovskiy, Vladimir : Leader of the Liberal Democratic Party in Russia. Was unanimously elected party president for a ten-year term. Wants to restore the glory of Russian Empire not by force of arms but through the economic might of Russia.

Zia, Begum Khateda : The housewife-turned-politician and chair-person of the Bangladesh Nationalist Party who became the first woman Prime Minister of Bangladesh. She resigned from the prime ministership in March 1996. Got defeated in 1996 elections by Sheikh Hasina Wajed of Awami League.

Zinedine Zidane : The 26-year-old French footballer was named the European Footballer of the Year for an eventful 1998 when he helped France win the World Cup. Zinedine Zidane also won the Reuters Sports Personality of the Year Award, beating Australian skier Hermann Maier and American sprinter Marion Jones into second and third places respectively.

Zhu Rongji : China's new PM, the 69-year-old technocrat with a diplomatic flair rose to top through sheer competence. Credited with controlling over 22% inflation in 1993, Zhu leads a team of innovative technocrats, imbued with reforms spirit. Having served as Central Bank Governor, Zhu has pledged to rescue China's tottering financial system by instilling discipline in banks. He is also the architect of a government overhaul intended to streamline the bloated and corrupt bureaucracy and prevent it from meddling in business.

3. Persons with Abbreviated or Alternative Names

Acharya Rajneesh: Osho
Adam Smith: Father of Economics
Adolf Hitler: Fuhrer (also Fuehrer)
Alfred Hitchcock: Master of Suspense
Andrei D. Sakharov: Father of the (Soviet) Hydrogen Bomb
Bal Gangadhar Tilak: Lokmanya; Father of Indian Unrest
Benito Mussolini: Il Duce
Bhagat Singh: *Shahid - e - Azam*
C. Rajagopalachari: 'C.R.'; Rajaji
C.F. Andrews: Deenabandhu
C.N. Annadurai: Anna
Chittaranjan Das: Deshabandhu
Dadabhai Naoroji: Grand Old Man of India; Father of Indian Politics and Economics
Dadasaheb Phalke: Father of Indian Cinema
Duke of Wellington: Iron Duke
Dwight David Eisenhower: Ike
Edmund Spencer: Poet's Poet
Elvis Presley: Elvis the Pelvis
Ernest Rutherford: Father of Nuclear Physics
Erwin Rommel: Desert Fox
Florence Nightingale: Lady with the Lamp
Geoffrey Chaucer: Father of English Poetry
George Bernard Shaw: 'G.B.S.'
Giovanni Boccaccio: Father of the Novel
Gurcharan Singh: Grand Old Man of Indian Pottery, Daddyji
Henrik J. Ibsen: Father of Modern Drama
Herodotus: Father of History
Hippocrates: Father of Medicine
Homi J. Bhabha: Father of Indian Nuclear Science
Indira Gandhi: Iron Lady of India
J.R.D. Tata: Father of Civil Aviation in India
Jamshedji Tata: Father of Indian Industry
Jawaharlal Nehru: Chacha; Panditji
Jayaprakash Narayan: 'J.P.'; Loknayak
Joan of Arc: Maid of Orleans
Joseph Priestley: Father of Soda Pop; Father of Modern Chemistry
K.M. Cariappa: Kipper, Grand Old Man of Indian Army
K.V. Puttappa: Kuvempu
Kalidas: Indian Shakespeare
Kato Ichiro: Dr. Robot

Khan Abdul Ghaffar Khan: Badshah Khan; Frontier Gandhi; *Fakhre-e-Afghan*
Lala Lajpat Rai: Punjab Kesari (Lion of the Punjab or *Sher-e-Punjab*)
M.F. Robespierre: The Incomparable
M.K. Gandhi: Bapu; Mahatma; Father of the Nation
M.S. Golwalkar: Guruji
Madan Mohan Malaviya: Mahamana
Nandlal Bose: Father of Modern Painting in India
Napoleon Bonaparte: Little Corporal; Man of Destiny
Otto von Bismark: Man of Blood and Iron, Iron Chancellor
Queen Elizabeth I: Maiden Queen
Rabindranath Tagore: Gurudev
Rajinder Singh: Sparrow
Rammohan Roy: Father of Indian Renaissance
Richard Cobden: Apostle of Free Trade
Samudragupta: Indian Napoleon
S. Sathyamurthi: Firebrand of South India
Salim Ali: The Birdman of India
Sarojini Naidu: Nightingale of India
Shakti Chattopadhyaya: Robert Frost of West Bengal
Sheikh Mohammad Abdullah: Lion of Kashmir (*Sher-e-Kashmir*)
Sheikh Mujibur Rahman: Bangabandhu
St. Nicholas: Santa Claus
Subhash Chandra Bose: Netaji
Susruta: Father of Modern Plastic Surgery
T.T. Krishnamachari: 'T.T.K.'
Tanguturi Prakasam: Andhra Kesari
Tenzing Norgay: Tiger of Snows
Thomas Cook: Father of Modern Tourism
Thomas Edward Lawrence: Lawrence of Arabia
Tushar Kant Ghosh: Grand Old Man of Indian Journalism
Vallabhbhai Patel: Iron Man of India, Bismark of India
Vinoba Bhave: Acharya
V.M. Basheer: Sultan of Bhopal
Walter Scott: Wizard of the North
William Ewart Gladstone: Grand Old Man of British Politics
William Pitt: The Younger Pitt; Grand Commoner
William Shakespeare: Bard of Avon

4. First in the World

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Asian to get Flnlx Award: Sr. P.C. Sercar (India)

Asian to win Nobel Prize (for Literature): Rabindranath Tagore (India; 1913)

Asian woman to cross the English Channel: Aarti Saha (India; 1959)

Chairman of People's Republic of China : Mao Tse-lung (1949)

Chinese pilgrim to visit India : Fahien (401-410)

Cricketer to have batted in all positions (1 to 11): Willred Rhodes (England)

Englishman to receive Nobel Prize for Literature: Rudyard Kipling (1907)

European Invader of India: Alexander (Greek; 326 BC)

European to visit China : Marco Polo (Italy; 13th C. AD)

Foreigner to receive Bharat Ratna: Abdul Ghaffar Khan (1987)

Governor General of Pakistan: Mohammed Ali Jinnah (1947)

High Commissioner of UN Human Rights Commission: Jeso Ayala Lasso (Ecuador; 1944)

Japanese woman in space: Chiaki Mukai (1994)

Man cosmonaut in space: Yuri Gagarin (former U.S.S.R; 1961)

Man to climb Mount Everest twice: Nawang Gombu (India)

Man to fly over both North and South Poles: Richard E. Byrd (U.S.)

Man to fly over the English Channel: Louis Bleriot (France; 1909)

Man to make a solo flight around the world: Wiley Post (1933)

Man to set foot on moon: Neil Armstrong followed by Edwin Aldrin (U.S.A.; 1969)

Man to walk in space: Alexei Leonov (former U.S.S.R)

Men on Mt. Everest without Oxygen: Reinhold Messner and Peter Habeler (1978)

Men to climb Mount Everest: Tenzing Norgay (India) and Edmund Hillary (New Zealand) (1953)

Men to cross the Sahara Desert: Dixon Denham and Hugh Clapperton (England)

Mongol Emperor of China: Kublai Khan (13th C. AD)

Muslim Invader of India: Mohammad-bin-Qasim (8th C. AD)

Person to sail round the world: Ferdinand Magellan (Portuguese; 1519-1522)

Pope to visit India: Pope Paul VI (1964)

President of Chinese Republic : Sun Yat-sen (1921-1925)

President of U.S.A. : George Washington (1789-1797)

Prime Minister of Great Britain: Robert Walpole

Prime Minister of Pakistan: Liaquat Ali Khan (1947)

Secretary General of the U.N.: Trygve Lie (Norway; 1946-1953)

Speaker in Hindi at the U.N.: Atal Behari Vajpayee (India; 1977)

Swimmer to swim several Straits in one calendar year: Mihir Sen (India; 1966).

Test Tube Baby: Louise Joy Brown (England; 1978)

Woman cosmonaut in space: Valentina Tereshkova (former U.S.S.R.; 1963)

Woman Judge of International Court of Justice: Rosalyn Higgins (Britain; 1995)

Woman Judge of Supreme Court: Sandra Day O'Connor (U.S)

Woman pilot to circle the globe: Jorrie Mock (1964)

Woman pilot to make a solo flight: Elise Doroché (1909)

Woman President of a country: María Estela Peron (Argentina)

Woman President of U.N. General Assembly: Vijayalakshmi Pandit (India; 1953)

Woman Prime Minister of a country: Sirimavo Bandaranaike (Sri Lanka; 1960)

Woman to climb Mount Everest twice: Sanjosh Yadav (1993)

Woman to climb Mount Everest: Junko Tabei (Japan; 1975)

Woman to cross the Strait of Gibraltar: Atri Pradhan (India)

Woman to reach North Pole: Ann Bancroft (1986)

Woman to travel South Pole alone: Liv Arnesen (Norway; 1995)

Youngest to sail around the world non-stop and alone: Keijiro Shiraishi (Japan; 1994)

5. First in India

Actress of the talkies: Zubeida, *Alam Ara* (1931)
 Actress to win Padma Shri Award: Nargis Dutt (1958)
 Architect: Maha Govinda (5th C. BC)
 Aryabhata Medal winner: K.R. Ramanathan (1977)
 Bharat Ratna Award winner: C. Rajagopalachari (1954)
 British Governor General of Indian Union: Lord Louis Mountbatten (Aug. 15, 1947–June 20, 1948)
 Captain of Test cricket: C.K. Nayudu (1932)
 Century in Test cricket: Lala Amarnath (1933–1934)
 Chairman of Rajya Sabha: S. V. Krishnamoorthy (1952)
 Chevalier Award winner: Sivaji Ganesan
 Chief Election Commissioner: Sukumar Sen (1950–1958)
 Chief Justice of India: Hiralal J. Kania (1950–1951)
 Chief of Air Staff: Sir Thomas Elmhirst (1947–1950)
 Chief of Army Staff to die in harness: B.C. Joshi (1994)
 Chief of Coast Guard: V.A. Kamath (1978–1980)
 Chief of Naval Staff: R.D. Katari (1958–1962)
 Commander-in-Chief: K.M. Cariappa (1949–1953)
 Cosmonaut: Rakesh Sharma (1984)
 Cricketer to have batted in all positions (1 to 11): Vinoo Mankad
 Dada Saheb Phalke Award winner: Devika Rani Roerich (1969)
 Dancer to perform abroad: Uday Shankar
 Deputy Prime Minister: Vallabhbhai Patel (1947–1950)
 Deputy Prime Minister to die in harness: Vallabhbhai Patel (1950)
 Elected President: S. Radhakrishnan (1962–1967)
 Emperor of Mughal Dynasty: Babar (1526–1530)
 Field Marshal: S.H.F.J. Manekshaw (1973)
 Film Star Chief Minister: M.G. Ramachandran (Tamil Nadu, 1977)
 Finance Minister to present the Budget three times in a row: Manmohan Singh (1993, 1994, 1995).
 Finix Award winner: Sr. P.C. Sorcar
 Geometer: Baudhayana, *Sulva Sutras* (800 BC)
 Governor General of British India: Warren Hastings (1774–1785)

Grammarian: Panini, *Ashtadhyayi* (6th C. BC)
 Helms Award winner: Kunwar Digvijay Singh Babu (1952)
 Home Minister: Vallabhbhai Patel (1946)
 ICS Officer: Satyendranath Tagore
 Indian Chief of Air Staff: S. Mukherjee (1954–1960)
 Indian Chief of Army Staff: M. Rajendra Singh (April 1, 1955–May 14, 1955)
 Indian Governor General of Indian Union: C. Rajagopalachari (June 1948–Jan. 1950)
 Indian Woman President of Indian National Congress: Sarojini Naidu (1925)
 J.C. Bose Medal winner: V. Ramalingaswami (1977)
 Jain Tirthankara: Rishabha Dev
 Jnanpith Award winner: G.Sankara Kurup, *Odakuzhal* (1965)
 Lady of the Indian film: Devika Rani Roerich
 Lata Mangeshkar Award winner: Naushad (1984)
 Lawgiver: Manu, *Manu Smriti* (3100 BC)
 Man to climb Mount Everest without oxygen: Phu Dorjee (1984)
 Man to climb Mount Everest: Tenzing Norgay (with Edmund Hillary, 1953)
 Man to make solo flight (from US to India): Satish Soman (1994)
 Man to reach South Pole: J. K. Bajaj (1989)
 Man to swim across English Channel: Mihir Sen (1966)
 Man to swim several Straits in one calendar year: Mihir Sen (1966)
 Managing Director of World Bank: Gautam Kaji (1995)
 Member of British Parliament: Dadabhai Naoroji (1862)
 Member of Viceroy's Executive Council: Sir S.P. Sinha (1909)
 Miss Universe: Sushmita Sen (1994)
 Miss World: Reita Faria (1966)
 Musician to get Padma Bhushan and Padma Vibhushan: M.S. Subbulakshmi (1954, 1975)
 Musician to get Ramon Magsaysay Award: M.S. Subbulakshmi (1974)
 Naval pilot: Y.N. Singh (1941)
 Nishan-i-Pakistan Award winner: Morarji Desai (1991)
 Nobel Prize winner: Rabindranath Tagore, *Gitanjali* (1913)

c Medal winner: Norman Pritchard, Silver
 Q) winner: Bhanu Athaiya
 da: Ajatashatru's killing of Bimbisara (494)
 ally handicapped mountaineer: Baba
 indra Pal
 J.R.D. Tata, Tata Airlines (1929)
 entation of Budget: R.K. Shanmugham
 nelly, Finance Minister (1947)
 entation of General Budget: C.D. Deshmukh,
 inance Minister (1952)
 sident : Rajendra Prasad (1950-1962)
 sident of Indian National Congress:
 W.C. Bonnerjee (1885)
 sident of International Court of Justice:
 Nagendra Singh (1970)
 sident to die in harness: Zakir Hussain (1967-
 1969)
 rime Minister: Jawaharlal Nehru (1947-1964)
 rime Minister assassinated: Indira Gandhi
 (1984)
 rime Minister to die in harness: Jawaharlal
 Nehru (1964)
 Prime Minister to head a minority government:
 Choudhary Charan Singh (July 28, 1979-Jan.
 14, 1980)
 Prime Minister to resign from office: Morarji
 Desai (1979)
 Prime Minister who did not face Parliament:
 Chaudhary Charan Singh (July 28, 1979-Jan.
 14, 1980)
 Ramon Medal winner: Salim Moynuddin Ahmed
 Ali (1979)
 Ramon Magsaysay Award winner: Vinoba Bhave
 (1958)
 of Stalin Peace Prize: Saifuddin
 Kitchlow (1954)
 Recipient of World Food Prize:
 M.S. Swaminathan (1987)
 S. Ramanujan Medal winner: S. Chandrasekhar
 (1962)
 S.S. Bhatnagar Medal winner: Atma Ram
 (1959)
 Scientist: Uddalaka Aruni (560 BC)
 Slave Ruler of India: Qutub-ud-din Aibak (1206-
 1210)
 Speaker in Hindi at the UN: Atal Behari Vajpayee
 (1977)
 Speaker of Lok Sabha: Ganesh Vasudao
 Mavalankar (1952-1957)
 Test-tube baby: Baby Harsha or Indira (1986)
 Vice-President: S. Radhakrishnan (1952-1962)

Viceroy of India: Lord Canning (1858-1862)
 Woman (Muslim) Ruler of India : Razia Sultana
 (1236-1240)
 Woman advocate: Cornelia Sorabji (1894)
 Woman Ambassador: Vijayalakshmi Pandit
 (U.S.S.R., 1947-1949)
 Woman at Antarctica: Meher Moos (1976)
 Woman Central Minister: Rajkumari Amrit Kaur
 (Health)
 Woman Chief Justice (of High Court): Laila Seth
 (Himachal Pradesh, 1991)
 Woman Chief Minister : Sucheta Kripalani (Uttar
 Pradesh, 1963-1967)
 Woman Foreign Minister: Lakshmi N. Menon
 (1957-1966)
 Woman Secretary General of Rajya Sabha: V.S.
 Rama Devi (1993)
 Woman Governor: Sarojini Naidu (Uttar Pradesh,
 1947)
 Woman IAS Officer: Anna Rajam George (1950)
 Woman IPS Officer: Kiran Bedi (1974)
 Woman jet commandar: Saudamini Deshmukh
 Woman Jnanpith Award winner: Ashapurna Devi,
Prathama Pratishruti (1976)
 Woman Judge of Supreme Court: Meera Sahib
 Fatima Beevi (1989)
 Woman Minister of State: Vijayalakshmi Pandit
 (Uttar Pradesh, 1937)
 Woman Missionary: Sanghamitra, daughter of
 King Asoka (Sri Lanka, 3rd C. BC)
 Woman pilot (Commercial): Prem Mathur (Deccan
 Airways, 1951)
 Woman pilot (Indian Airlines): Durba Banarjee
 (1966-1988)
 Woman President of Indian National Congress:
 Annie Besant (1917)
 Woman President of UN General Assembly:
 Vijayalakshmi Pandit (1953)
 Woman Prime Minister: Indira Gandhi (1966-1977,
 1980-1984)
 Woman Sahitya Akademi Award winner: Amrita
 Pritam, *Sunehra* (1956)
 Woman to climb Mount Everest: Bachendri Pal
 (1984)
 Woman to perform a solo flight: Harita Kaur Deol
 (1994)
 Woman to swim across English Channel: Arati
 Saha (1959)
 Woman to swim across the Strait of Gibraltar:
 Arti Pradhan
 Woman to win an Asian gold: Kamaljit Sandhu
 (1970)
 Woman to go in Space: Dr. Kalpana Chawla
 (November 1997)

6. Persons Associated with Arts and Theatre

INTERNATIONAL MUSIC

Albert Schewitzer (Germany) : Composer, Musician
 Edvard Grieg (Norway) : Composer, Musician
 Fats Waller (USA) : Instrumentalist (Piano)
 Frederic Chopin (Poland) : Musician
 Giuseppe Verdi (Italy) : Musician
 Heitor Villa Lobos (Brazil) : Composer
 Hugo Wolf (Austria) : Composer
 Jan Paderewski (Poland) : Instrumentalist (Piano)
 Joseph Haydn (Austria) : Composer
 Ludwig van Beethoven (Austria) : Composer
 Peter Ilyrich Tchaikovsky (Russia) : Composer
 Stevie Wonder (USA) : Composer, Singer
 W.A. Mozart (Austria) : Composer
 Whitney Houston (U.S.A.) : Pop Vocalist
 Yehudi Menuhin (U.S.A.) : Instrumentalist (Violin)

PAINTING

Angelico Era (Italy)
 David Wilkie (Scotland)
 Edouard Vuillard (France)
 Fra Angelico (Italy)
 Francisco de Zurbaran (Spain)
 Jan Steen (Dutch)
 Joshua Reynolds (England)
 Leonardo da Vinci (Italy)
 Michaelangelo Bounarroti (Italy)
 Paolo Uccello (Italy)
 Paul Cezanne (France)
 Peter Paul Rubens (England)
 Picasso (Spain)
 Raphael Sanzio (Italy)
 Syvatoslow Roerich (Former USSR)
 Van Ryn Rembrandt (Dutch)
 Wang Wei (China)
 William Hogarth (England)

SCULPTURE/POTTERY

Auguste Rodin (France)
 Bernard Leach (British; Pottery)
 Leonardo da Vinci (Italy)
 Lorenzo Ghiberti (Italy)
 Luca della Robbia (Italy)
 Michaelangelo Bounarroti (Italy)
 Phidias (Greece)
 Rodin Auguste (France)

CARTOON

Walt Disney (U.S.A.)

NATIONAL DANCE

Achan Maharaj: Kathak
 Adyark Lakshman: Bharatnatyam
 Ananda Shivaraman: Kathakali
 Bala Saraswati: Bharatnatyam
 Bharati Gupta: Kathak
 Bharati Shivaji: Kathakali (Mohiniattam)
 Blinda Din Maharaj: Kathak
 Birju Maharaj: Kathak
 C.V. Chandrasekhar: Bharatnatyam
 Chandrasekhar: Creative
 Chandrasekhar Bhanj: Chhau
 Chennithala Chellappan Pillai: Kathakali
 Chinta Krishna Murli: Kuchipudi
 Damayanti Joshi: Kathak
 Debaprasad Das: Odissi
 Dharendra Nath Pattnaik: Odissi
 Durga Das: Kathak
 Gopi Krishna: Kathak
 Haobam Ongbi Ngangbi Devi: Manipuri
 Indrani Rahman: Odissi
 Jhaveri Sisters: Manipuri
 Josyula Seetharamalah: Kuchipudi
 K.J. Sarasa: Bharatnatyam
 K. Kalicharan Pattnaik: Odissi
 Kalkadin: Kathak
 Karl Khandavala: Kathak
 Kelucharan Mahapatra: Odissi
 Krishnan Kutty: Kathakali
 Kuberanath Appasaheb Tanjorkar: Bharatnatyam
 Kumudini Lakhia: Kathak
 Lachhu: Kathak
 Lakshmi Narayana Shastri: Kuchipudi (Tarangam)
 Leela Samson: Bharatnatyam
 Madhavan: Kathakali
 Maneshi De: Kathak
 Manjusri Chaki Sircar: Creative
 Minati Das: Odissi
 Mrinalini Sarabhai: Bharatnatyam
 Nataraja Ramakrishna: Kakatiya
 Nayana Jhaveri: Manipuri
 Nirmala Mehta: Manipuri
 Padma Subrahmanyam: Bharatnatyam
 Padmanabhan Nair: Kathakali
 Poniah Pillai: Kathakali
 Priyambada Mohanty: Odissi
 Raja and Radha Reddy: Kuchipudi

Ram Gopal: Kathakali
 Ram Narayan Mishra: Kathak
 Ramachandra Ganguly: Kathak
 Reba Vidyarthi: Kathak
 Rita Devi: Manipuri
 Roshan Vajid: Kathakali (Mohiniattam)
 Rukmini Devi: Bharatnatyam
 S. Sankaran Nair: Krishnattam
 Sachin Shankar: Creative
 Sambhu Maheraj: Kathak
 Sanyukta Panigrahi: Odissi
 Savita Mehta: Manipuri
 Shanto Rao: Kathakali (Mohiniattam)
 Siddhendra Yogi: Kuchipudi
 Sitara Devi: Kathak
 Sonal Mansingh: Bharatnatyam, Odissi
 T. Balasaraswathi: Bharatnatyam
 T.T. Raman Kutty Nair: Kathakali
 Thambel Yalma: Manipuri
 Tirthe Narayana: Kuchipudi
 Uday Shankar: Kathakali
 Uma Sharma: Kathak
 Vallathol Narayana Menon: Kathakali (Mohiniattam)
 Vedantam Satyanarayan: Kuchipudi
 Vempathi Chinna Sathyam: Kuchipudi
 Vempathi Satyanarayan: Kuchipudi
 Vishnu Shirodkar: Kathak
 Yamini Krishnamurthi: Bharatnatyam, Kuchipudi

MUSIC

COMPOSERS/MUSICIANS

Abdul Karim Khan: Hindustani (Khayal)
 Abdul Walid Khan: Hindustani (Khayal)
 Alladin Khan: Hindustani (Khayal)
 Amir Khusro: Hindustani (Khayal)
 Antsher Lobo: Hindustani
 Ariyakudi Ramanuja Ayyangar: Carnatic
 Nadhar: Carnatic
 Ghulam Ali Khan: Musician
 Bina Bua: Hindustani (Khayal)
 Bhaskara Bua: Hindustani (Khayal)
 Bhatkande: Hindustani (Melakarta)
 Bhimsen Joshi: Classical
 Chembai Vaidyanatha Bhagavata: Carnatic
 Dakshinamurthy Pillai: Carnatic
 Fazluzuddin Dagar: Musician (Dhrupad)
 Fayyaz Khan: Hindustani (Khayal)
 Hari Das: Hindustani (Dhrupad)
 Iryakudi Ramanuja Iyengar: Classical
 Krishna Rao Shankar Pandit: Musician
 M. Vishwanatha Iyer: Carnatic
 Madurai Mani Iyer: Carnatic
 Manikavachagar: Carnatic
 Muhammad Reza: Hindustani

Muthu Thandavar: Carnatic
 Muthuswami Dikshitar: Carnatic (Dhrupad)
 Nathan Khan: Hindustani (Khayal)
 Naushad: Musician
 Nazir Amlinuddin Dagar: Musician (Dhrupad)
 Onkarnath Thakur: Musician
 Palaghat Mani Iyer: Carnatic
 Palaghat Rama Bhagavata: Carnatic
 Palani Subbudu: Carnatic
 Purandaradasa: Carnatic
 Rahmat Khan: Hindustani (Khayal)
 Rama Rao Nalk: Hindustani
 S. Balachander: Carnatic (Melakarta)
 Sharad Chandra Arulkar: Hindustani
 Shyama Shastri: Carnatic
 Siddhoswar Dev: Musician
 Sumitra Charatram: Classical
 Swati Tirunal Rama Varma: Carnatic
 Tansen: Musician, Hindustani (Dhrupad)
 Thalappakam Annamacharya: Carnatic
 Thayumanavar: Carnatic
 Thyagaraja: Carnatic
 V. Balasa: Musician (Carnatic)
 Vinayachandra Maudgalaya: Classical
 Zahiruddin Dagar: Musician (Dhrupad)
INSTRUMENTALISTS
 Abad Mistry: Tabla
 Abdul Halim Jaffer Khan: Sitar
 Ahmed Thirkkuwa: Tabla
 Ali Akbar Khan: Sarod
 Allah Rakha: Sarod
 Allauddin Khan: Sarod
 Amjad Ali Khan: Sarod
 Annapurna Devi: Surbahar (Hindustani)
 Asad Ali Khan: Veena (Hindustani)
 Baluswamy Dikshitar: Violin
 Barun Pal: Guitar
 Bhajan Sopori: Santoor (Hindustani)
 Bismillah Khan: Shehnai
 Buddhadev Des Gupta: Sarod (Hindustani)
 Buddhaditya Mukherjee: Sitar
 Chhatrapati Singh: Pakhawaj (Hindustani)
 Dwaram Venkataswami Naidu: Violin
 Gajanan Rao Joshi: Violin
 Gopal Das Panse: Pakhawaj (Hindustani)
 Govindaswamy Pillai: Violin
 Hara Shankar Bhattacharya: Sitar (Hindustani)
 Hari Prasad Chaurasia: Flute
 K.R. Kumaraswamy Iyer: Veena (Carnatic)
 Kalkhosm Shapurji Sorabji: Piano
 Kalpakam Swaminathan: Veena (Carnatic)
 Kandadevi S. Alagiriswamy: Violin (Carnatic)
 Kishan Maharaj: Tabla
 Kunnakudi Vaidyanathan: Violin (Carnatic)
 L. Subramanyam: Violin

Lalgudi Jayaraman: Violin
 M. K. Kayanakrishna Bhagavathar: Veena
 (Carnatic)
 M.S. Gopalakrishnan: Violin
 Mayavaram Govindaraj Pillai: Violin
 Mysore T. Chowdiah: Violin
 N. Rajam: Violin
 Nikhil Banerjee: Sitar
 Nikhil Ghosh: Tabla
 Pannalal Ghosh: Flute
 Rais Khan: Sitar
 Rajamanickam Pillai: Violin
 Ramnarayan: Sarangi
 Ravishankar: Sitar
 S. Balachander: Veena (Carnatic)
 Sabri Khan: Sarangi
 Sadiq Ali Khan: Veena
 Shafat Ahmad Khan: Tabla
 Shaikh Dawood: Tabla (Hindustani)
 Shanta Prasad: Tabla
 Sharan Rani: Sarod
 Sheikh Mohammad Arif: Clarinate (Hindustani)
 Shiv Kumar Sharma: Santoor
 Sultan Khan: Sarangi (Hindustani)
 Tarun Bhattacharya: Santoor
 T.R. Mahalingam: Flute
 Uma Shankar Mishra: Sitar (Hindustani)
 Umayalpuram K. Sivaraman: Mridangam
 (Carnatic)
 V. C. Jog: Violin
 V. Doreswamy Iyengar: Veena
 V. V. Subramaniam: Violin
 Vellore G. Ramabhadran: Mridangam (Carnatic)
 Vilayat Khan: Sitar
 Vishwamohan Bhatt: Guitar
 Zakir Hussain: Tabla
 Zarin S. Sharma: Sarod
 Zubin Mehta: Violin
LOCALISTS
 Akhila Krishnan: Carnatic
 Balasaheb Poochwale: Hindustani
 Begum Akhtar: Ghazal
 D.K. Pattamal: Carnatic
 Damodar Hota: Hindustani
 G. Kodandaraman: Carnatic (Nagaswaram)
 Girija Devi: Hindustani
 Gulam Ali: Ghazal
 Gulam Mustafa Khan: Hindustani
 H.K. Raghavendra: Carnatic (Violin)
 H.K. Venkatram: Carnatic (Violin)
 Hirabai Barodekar: Classical
 Kumar Gandharva: Hindustani
 Lakshman Prasad Chaube: Haveli Sangeet
 Lakshmi Tulasi: Carnatic
 M. Balamurali Krishna: Carnatic

M.L. Vasanthakumari: Carnatic
 M.S. Subbulakshmi: Carnatic
 Mallikarjun Mansoor: Hindustani
 Mani Krishnaswamy: Carnatic
 Meenakshi Biswas: Hindustani
 Mehndi Hasan: Ghazal
 Naina Devi: Carnatic (Dadra and Thumri)
 Prabha Aatre: Hindustani
 Rahim Fahimuddin Dagar: Hindustani
 Rajdulari (Rekha) Khan: Hindustani
 Ramarao V. Naik: Hindustani
 S. Rajam: Carnatic
 Shirali Vishnudas: Hindustani
 Shivkumar Shukla: Hindustani
 Sripada Pinakapani: Carnatic
 Subhashini Parthasarathy: Carnatic
 Thanjavur S. Kalyanaraman: Carnatic
 Trichy Swaminathan Iyer: Carnatic
 Uma Garg: Hindustani
 Vinayar Rao Narayan Patwardhan: Hindustani
 Vishnu Digambar Paluskar: Hindustani
 Vishnu Narayan Bhatkhande: Hindustani

PAINTING

A.K. Haldar: Modern
 Abanindranath Tagore: Nationalist
 Adwaita Gadanayak: Stone
 Amrita Sherghil: Modern
 Anandamoy Bannerji: Woodcut (Graphic)
 Arpita Singh: Modern
 Arvind Acharya: Water
 Ashwini Kumar Sharma: Modern
 B.N. Arya: Modern
 Bimal Dasgupta: Modern
 C.K. Ramakrishna Nair: Modern
 Charles Correa: Modern
 Gaganendranath Tagore: Modern
 Ganga Devi: Modern (Madhubani)
 Ganpat Bhadke: Acrylic
 Jagdeep Garcha: Oil
 Jai Zharotia: Acrylic
 Jamini Roy: Modern
 Jodh Singh: Modern
 Jogen Chowdhury: Modern
 K. Madhav Menon: Modern
 K. Mazumdar: Modern
 K. Muralidharan: Mixed media
 Kalicharan Gupta: Modern
 Laxman Goud: Modern (Graphic)
 M.F. Husain: Modern
 Muhammad Abdur Rahman Chughtai
 Murlal Lahoti: Oil
 N.S. Bendre: Modern
 Nand Lal Bose: Modern
 P. Perumal: Modern

P. Srinivasan: Oil
 Rabindranath Tagore: Modern
 Rajender Tikku: Wood
 Rajesh Sharma: Oil
 Ram Kumar: Modern
 Ramendu Sonawane: Oil
 Ramesh Vaghela: Acrylic
 Ravi Verma: Modern (Oil)
 S. Easter Raj: Oil on pastel
 S.G. Vidyashankar Satapathy: Bronze
 Salloz Mookherjee: Modern
 Sallu Sahani: Engraving (Graphic)
 Sanjeev Sinha: Modern
 Sarda Ukil: Modern
 Satish Gujral: Painter-cum-muralist
 Sobha Singh: Oil
 Subba Ghosh: Etching (Graphic)
 Sudhir Patavardhan: Modern
 Suresh B. Awari: Oil on canvas
 Suresh Chand Jain: Modern
 T. Valkuntam: Acrylic
 V.P. Singh: Modern
 Vishnu Das: Modern

SCULPTURE/POTTERY

Chandrasen Jadhav
 D. Rajasekharan Nair (Granite)
 Gurcharan Singh (Studio pottery)
 Marla Antony Raj (Terracotta)
 Nek Chand (Stone)
 T. Vijayavelu
 V. Satheesan

CARTOON

Keshava Shankar Pillai, R.K. Laxman,
 Sudhir Dar, Sudhir Taitang

THEATRE

S. Ramakrishna (Kannada)
 Bar Sankara Pillai (Malayalam)
 Kshara (Kannada)
 Anna Sahib Kirokar (Marathi)
 Babban Khan (Hindi)
 Badal Sarkar (Malayalam)
 Bharatendu Harishchandra (Hindi)
 C.N. Sreekantan Nair (Malayalam)
 Deenabandhu Mitra (Bengali)
 E.V. Krishna Pillai (Malayalam)
 Girish Karnad (Kannada)
 K. Kumara Pillai (Malayalam)
 K.V. Subanna (Kannada)
 Manoranjan Das (Oriya)
 Mohit Chattopadhyay (Bengali)
 N. Krishna Pillai (Malayalam)
 Neelu Phule (Marathi)

Ochira Velukutty (Malayalam)
 Om Shivpuri (Hindi)
 P. J. Antony (Malayalam)
 Ponkunnam Varkey (Malayalam)
 Poornam Vishwanathan (Tamil)
 Pransukhlal Nayak (Gujarati)
 Prasanna (Kannada)
 R. Nagarathnamma (Kannada)
 S.L. Puram Sadanandam (Malayalam)
 Sabitri Helsnam (Manipuri)
 Shambhu Mitra (Bengali)
 Shrivaji Ganesan (Tamil)
 Surendra Varma (Hindi)
 T.N. Gopinathan Nair (Malayalam)
 Tarun Roy (Bengali)
 Thoppli Bhasi (Malayalam)
 Vijay Tendulkar (Marathi)
 Viswanath Das (Tamil)

FOLK ART

MUSIC

Bindhya Basini Devi (Bihar)
 Janaradhan Nedungady (Kerala)
 Khagen Mahanta (Assam)
 Puranchand and Pyarelal Wadali (Punjab)
 Sakar Khan Manganlar (Rajasthan)
 Siddheshwar Sen (Madhya Pradesh)

DANCE

Ammanur Madhav Chakyar: Kerala (*Koodiyattam*)
 Babi Nalang: Maharashtra (*Dashavatar*)
 Fatehkrishna Sharma: Uttar Pradesh
 Kunjan Nambiar: Kerala (*Ottan Thullal*)
 Laigudim Swaminathan: Tamil Nadu (*Tevasam*)
 Moozhikulam Kochukuttan Chakyar: Kerala (*Koodiyattam*)
 Purisal N. Subramania Thambiran: Tamil Nadu
 Ramakrishna Solanki: Rajasthan (*Nagara*)
 S. Devabrata Singh: Manipur (*Thangta*)
 S.S.S. Thakur: Himachal Pradesh (*Karyala*)
 Srilam Sharma: Uttar Pradesh
 T.S. Balakrishna Sastrigiri: Tamil Nadu (*Harikatha*)

THEATRE

B. Veerabhadra Nayak: Yakshagana, Karnataka
 Keremane Mahabale Hegde: Yakshagana, Karnataka
 Keremane Shambhu Hegde: Yakshagana, Karnataka
 Siddhendra Yogi: Yakshagana, Karnataka

PUPPETRY

Dadi Doram Pudumjee

7. Important Places

Abu Musa : It is the strategically located island, which Teheran runs jointly with the United Arab Emirates. It was in the news when Iran escalated its dispute with Arab states over it, claiming it had historical and legal documents to prove its sovereignty over the Gulf island. The claim came a day after an alliance of Gulf Arab states alleged that Iran was violating a 1971 agreement on sharing sovereignty over the island with Sharjah, one of the confederates of the United Arab Emirates.

Adam's Bridge: The 17-mile long bridge is a line of rocks and sand-banks between India and Sri Lanka.

Agra: Located in U.P. on the bank of Yamuna, it is famous for Taj Mahal, Fort and Pearl Mosque. The tomb of Akbar at Sikandara is also located near it.

Aga Khan Palace: Located in Pune where Mahatma Gandhi and his wife Kasturba Gandhi were interned. Kasturba died in this palace (1944).

Ajanta and Ellora: Located near Aurangabad in Maharashtra State are famous for Buddhist cave temples which are richly ornamented with sculpture and carved with paintings of exceptional skill.

Ajmer: Located in Rajasthan, it is a pilgrim centre for Muslims. The tomb of Khwaja Moin-ud-din Chishti, the 12th century Sufi saint who was a descendant of Hazrat Ali, is located here. Khwaja was popularly known as "Garib Nawaz."

Akal Takht: Located in the Golden Temple complex of Amritsar, it has been the seat of spiritual and temporal authority of Sikhs since 1906 as also a place of confession and penance. The foundation for the building was laid by the sixth Sikh Guru, Guru Hargovind, who used to sit there on a raised platform and issue orders to his followers.

Akmola: Kazakhstan's new capital (w.e.t. December 10, 1997) situated in the steppes of central Asia (Earlier Capital Almaty).

Al-Aqsa Mosque: It is considered to be Islam's third holiest place, located in the walled city of Jerusalem.

Alexandria: A renowned city and sea port of Egypt founded by Alexander the Great.

Allahabad: A famous town in Uttar Pradesh; important place of Hindu pilgrimage; confluence of three rivers—the Ganga, the Yamuna and the Saraswati.

Alma Ata : The capital of the former Soviet Union Republic of Kazakhstan was in the news where in a meeting 11 republics decided on the shape of the Commonwealth of Independent States

(C.I.S.) to be taken and to bury the Union of Soviet Socialist Republics.

Alwaye: Located in Kerala, it is known for the FACT unit manufacturing fertilisers and monazite.

Amarnath : The site of the cave temple is located about 150 km from Srinagar in Jammu and Kashmir. Every year thousands of devotees of Lord Shiva begin their yatra from Pahalgam, located 96 km east of Srinagar at an elevation of 2,400 m (7,280 ft). Pahalgam is an idyllic resort skirting the banks of the snow-fed Lidder. En route to the Amarnath cave, 46 km from Pahalgam, the pilgrims halt at Chandanwari, Sheshnag and Panchtami for night rest. In 1994, the Chhavi Mubarak, the holy mace of Lord Shiva, was attacked by militants at Khannabal crossing, 52 km from Srinagar, on the Srinagar-Jammu National Highway, despite security arrangements by the Government by engaging securitymen escorting pilgrims bound for the shrine.

Amber Fort: A huge historic fort situated near Jaipur in Rajasthan. It contains finest specimens of Rajput architecture.

Amritsar: The north-west border town of India is known for the Golden Temple and Jallianwala Bagh tragedy of April 13, 1919. The city which was founded by Guru Ram Dass, the fourth Guru, celebrated its 400th anniversary in October 1977.

Andaman & Nicobar Islands : The Indian islands in the Bay of Bengal were in the news when Indian Armed Forces in February 1998, chased a gang of gun-runners who were supplying arms to North East rebels especially Naga rebels.

Anand Bhawan: Located in Allahabad, it was the residence of Motilal Nehru. After the death of Jawaharlal Nehru, it has been dedicated to the Indian National Congress.

Anandpur Sahib: Located in Ropar district of Punjab, it is the historic birthplace of Khalsa and is known for the Takhat Sri Keshgarh Sahib. It was the venue of tercentenary celebrations of the Khalsa from April 8 to 14, 1999.

Angkor: It is a ruined city of Kampuchea. Beautiful specimens of ancient Indian art and culture are found here.

Angkor Vat: It is the magnificent temple complex of Kampuchea. Built to the Hindu god Vishnu by the Khmer King Suryavarman II in the period of 1113-1150, it is the largest religious structure in the world.

Ankleswar: It is located in Gujarat has been struck here.

Apawor (Nigeria): The place near the Niger River delta village was in the news when fumes from the leaking pipe suddenly ignited leading to the blast of pipeline, killing over 1000 persons in 1998. The accident would go down as the worst in the history of oil production.

Aswan Dam: Constructed across river Nile in Egypt, it is one of the biggest dams in the world.

Atlanta : The southern United States city was the venue of the 1996 Summer Olympics, the 100th birthday of the modern Games. The city won a long race over Athens, where the Olympics were born in 776 BC and were reincarnated in 1896, and four other rivals to host the Games. Atlanta is world headquarters of soft drink giant Coca-Cola.

Aurangabad: A town of Maharashtra State, it is known for Ellora and Ajanta caves which are approachable from this place. It also has the tomb of Aurangzeb and his wife.

Auroville: The 19-sq km "City of Dawn", is located some eight kilometres north of Pondicherry on the Tamil Nadu coast.

Ayodhya : Located in Uttar Pradesh and known for the birthplace of Lord Rama, it was in news when the disputed shrine Babri Masjid, built by Mir Baqi in 1528 was reduced to rubble by thousands of determined and frenzied kar sevaks on December 6, 1992. The demolition constituted an unabashed violation of the rule of law and it made a mockery of the repeated assurances given to the Allahabad High Court and the Supreme Court by the Kalyan Singh Government and high priests of the Sang Parivar. It provoked the most vicious communal rioting in India.

Babylon: Located 88 km south of Baghdad; Iraqis are working feverishly to salvage the remains of this ancient centre of the arts, science and trade, which has been laid to waste by water, winds and fire. There is nothing left of the ancient Hanging Gardens or the Biblical Tower of Babel. Around 539 BC the city was destroyed by the Assyrians, but was extensively rebuilt on a grandiose scale during the reign of king Nebuchadnezzar, who flourished from 605 to 563 BC. Alexander the great died here in 322 BC.

Baghdad: The Iraqi capital was in the news when the US-UK air strikes, codenamed Operation Desert Fox, bombed it on December 17, 1998.

Balkonour: Situated in the boundless steppes of Kazakhstan in the Soviet Union, it is the cosmodrome from where the 975-kg Indian remote sensing satellite, IRS-1A was launched by the Soviet Vostok rocket on March 17, 1988. It was from this cosmodrome that the first Indian cosmonaut, Squadron Leader Rakesh Sharma, was launched into space aboard the Soyuz T-11 on April 3, 1984. IRS-1C was also put into orbit by the

Russian Molniya rocket that blasted off from here on December 28, 1995.

Bangalore: The beautiful city, known as the Garden City of India, made a mark on the global map when it hosted the Miss World 1996 contest at the Chinnaswamy Stadium in which 88 beauties from all over the world participated.

Bangkok : The Thai capital has been chosen over Jakarta and Taipei to host the 1998 Asian Games. Bangkok has staged the Games three times previously, in 1966, 1970 and 1978.

Baraun: Situated in Bihar, it is known for a big oil refinery.

Barcelona : The capital of Catalonia and Spain's second largest city was the venue of the 25th Summer Olympic Games from July 25 to August 9, 1992—the venue of a record number of events and games—159 for men, 86 for women and 12 for both, with 172 countries competing in 25 sports, besides three demonstration games.

Baripada : Located in Mayurbhanj district of Orissa, it was in the news when over 200 people were charred to death and 300 injured in a devastating fire at a religious congregation there.

Barpeta : A district of Assam was in the news when in a blistering pre-dawn attack, armed guerrillas of the outlawed Bodo Security Force shot dead 50 people, including women and children, and injured 100 at the Bansbari relief camp, where victims of the ongoing ethnic riots in the State had taken shelter.

Barren Island : Located 125 km off Port Blair in the Andamans and Nicobar archipelago, it was born of a submarine eruption a million years ago. A giant cone was formed and the top blew up in 1803. Now after 188 years, the active volcano in the country has erupted. The volcano stirred itself into life and was first noticed on April 30, 1991 by the personnel of the Directorate of Lighthouses and Lightships in a routine check.

Beijing : The capital of the People's Republic of China was the venue of the 11th Asian Games held from September 22 to October 7, 1990. Despite domestic economic problems, \$600 million was spent on refurbishing the 33 stadia used for the Games. The opening and closing ceremonies took place at Beijing Workers' Stadium. Pan Pan, the loveable panda, was the mascot of the Games. At stake were 308 gold medals in 27 competition sports, with baseball and soft tennis as demonstration sports.

Belgrade: The capital of Yugoslavia was in the news when NATO forces began their air strikes on the place on March 24, 1999 to halt the Serb forces' offensive in Kosovo.

Berlin Wall: The 47-km barrier that had divided East and West Germany for 28 years was

dismantled by the East German Government on November 18, 1989 when it was decided to allow full freedom of movement for its citizens to the West.

Bethlehem: It is in Israel and is the birthplace of Jesus Christ.

Bhakra: Is known for Bhakra Dam built across the Sutlej river.

Bharat Bhavan : Designed by India's leading architect Charles Correa, it is a leading centre of India's performing arts, particularly its folk theatre, in Bhopal.

Bharatpur: Located in Rajasthan, it is known for the famous Ghana bird sanctuary which stretches across 2,900 sq km.

Bhilai: It is situated in Madhya Pradesh and is known for the big steel plant set up with the assistance of Russia.

Bhubaneswar: It is the capital of Orissa, famous Lingaraja Temple is situated here.

Big Ben: It is the big clock installed in 1859 on the tower of British Parliament House Building in London.

Bijapur: Located in Karnataka, it is known for the Gol Gumbaz. It was the capital of Adilshahi Sultan of Bijapur.

Bodhi Gaya: Located in Bihar, about 15 km from Gaya, it is one of the most sacred places for both Buddhists and Hindus. It was here that the quest of Prince Siddhartha ended, after nine years of seeking the Truth, and the saga of Buddha began. At the foot of the Bodhi tree here, Shakyamuni Gautama attained Mahaparinirvana and became the Enlightened One. The Bodhi tree seen today springs from the original tree under which Gautama attained supreme knowledge.

Bombay High: It is India's most promising offshore area in the Arabian Sea near Mumbai. India's first self-propelled drilling ship "Sagar Samrat" had started exploration of oil here.

Bucharest: It is the place in Romania where 81 countries participated at the 40th International Mathematical Olympiad (IMO) held in the third week of July 1999. India secured three silver and three bronze medals and was ranked 18.

Buckingham Palace: The London house of the Sovereign since Queen Victoria's accession to the throne in 1837. It was purchased by King George III in 1762 from the heir of the Duke of Buckingham and was altered by Nash for King George IV. The palace was in August 1993 opened to the public view for a fee of eight pounds.

Buland Darwaza: Near Agra, it is a gateway to Fatehpur Sikri, which was built by Akbar the Great. Its height is 186 ft and is the highest gate in the world.

Cairo : The capital city of Egypt was the venue of the International Conference on Population and Development in September 1994.

Calcutta: It is the capital of West Bengal State and is an important commercial and industrial centre of India. It has a big port and is known as "City of Palaces". The important places of Calcutta are Planetarium, Victoria Memorial, Dakshineswar Temple, Diamond Harbour, Howrah Bridge, Beyer House (the seat of National Library). It was in the news when an inaugural India-Bangladesh bus service to Dhaka, the capital of Bangladesh was started in June 1999. However, the regular bus service commenced operation on w.e.f. July 5, 1999.

Campbell Bay: The southernmost island of the Andaman and Nicobar group, which is situated about 480 km from Port Blair.

Cannes : The French city recently hosted the 50th International Film Festival. The very first Cannes conclave was originally scheduled in September 1939, which was cancelled after Hitler invaded Poland. The organisers successfully organised the film festival in 1946. The 1948 and 1950 festivals had to be called off because of insufficient funds, that is why 1997 happened to be the annual gathering's 50th session. The festival opened on May 11, 1997 and the extravagance, hype and hoopla of this year outstripped any "ordinary year" at the French beach resort.

Cape Canaveral : The place in Florida, USA was the launch site of *Columbia* which carried Chandra X-ray observatory from the Kennedy Space Center on July 23, 1999 under the command of Col. Eileen Collins, the first woman in space history to be assigned the job.

Cape Comorin: Located in Tamil Nadu, it is the place where Arabian Sea and Bay of Bengal meet the Indian Ocean. The southernmost tip of India, it is also known as Kanyakumari. It is a picturesque spot and the visitors enjoy the sunrise and sunset at this place. It is also famous for the Vivekananda Rock Memorial.

Cape Kennedy: Located in Florida (U.S.A.) is the missile launching centre and headquarters of National Aeronautics and Space Administration (NASA). It has been named after John F. Kennedy, the former President of the United States of America.

Capitol, The: Located in Washington, it houses the Senate (the Parliament of United States of America).

Caracas : The capital of Venezuela was the venue of the second summit of the Group of 15 developing countries (G-15) held in November 1991. India at the summit was represented by the Prime Minister, Mr. P.V. Narasimha Rao.

Chandipur-on-Sea : Located on the Orissa coast near Balasore, it is known for the launching of intermediate range ballistic 'Prithvi', 'Akash' and 'Agni'. It

India's most sophisticated short-range surface-to-air missile *Trishul* was successfully test-fired hitting the target dropped from the unmanned aircraft vehicle, *Nishant* on April 16, 1999.

Charminar: The 400-year-old historic landmark of Hyderabad, the city of minarets and palaces had been closed for public in November 1986, following suicide by a family of five from its first floor.

Chashma: Located near Mianwali in Punjab province, some 200 km south-west of Islamabad on the bank of the Indus, is the site where the work on the construction of Pakistan's second nuclear power plant has commenced. The plant is an improved version of a Chinese nuclear power plant located near Shanghai.

Chemagurl: Located near the Sagar Islands, it was in the news when about 150 pilgrims returning from the Sagar Mala in West Bengal died when the ill-fated steamer, *Ma Abhaya*, capsized in the river Barak on January 15, 1994. The boat carried passengers far in excess of its capacity and the collision with another vessel occurred because of total lack of navigational aid.

Chennai: The capital of Tamil Nadu was the venue of the 86th Indian Science Congress, held from January 3 to January 7, 1999.

Chernobyl: Located 130 km north of the Ukrainian capital of Kiev in the Soviet Union, it was in the news for the explosion of the nuclear reactor here on April 28, 1986. The accident, the first in any Soviet atomic power plant, sent a cloud of radiation over Sweden, Finland, Norway and Denmark.

Cherrapunji: The wettest place on earth, situated 1,313 metres above sea level in the picturesque north-eastern State of Meghalaya, records the world's highest annual rain.

Chittaranjan: It is situated in West Bengal and known for the manufacture of railway locomotives.

Jalloraghar: It is situated in Rajasthan and for Tower of Victory which was built by Rana Jai Singh. Mira Bai's temple is also located here.

Clark Air Base: The largest U.S. air base overseas, which was a key operational centre in Philippines during the Korean and Vietnam wars, has been formally returned to Philippines by the United States on November 26, 1991.

C.N. Tower: Located in Toronto, Canada, is the world's tallest freestanding structure. The height of the tower is 1,815 feet 5 inches — 553.33 metres. The top piece of the Antenna mast was delicately positioned on the tower on April 2, 1975.

Coimbatore: The textile city of Tamil Nadu was the scene of a series of bomb blasts that killed more than 50 people and wounded a few hundred. The first blasts took place at a site of a rally to be addressed by the BJP leader, Mr. L.K. Advani.

Cologno: The place in Germany was the venue of G-8 heads of States three-day summit from June 18-20, 1999 to consider post-peace situation in Kosovo and reconstruction process there as also more importantly Pak intrusion in Kargil which it termed as irresponsible.

Corbett Park: The Corbett National Park in the Kumaon Himalayas, which acquired legendary fame through Jim Corbett's *Man Eaters of Kumaon*, celebrated its diamond jubilee in 1996. It is a place of tourist importance. Two hundred and forty-six kilometres from Delhi, the Corbett National Park covers an area of 1,381 sq km and houses within its boundary the Corbett Tiger Reserve and the Sonanadi Wildlife Sanctuary. The sprawling forest is dominated by very tall sal trees.

Crimea: A peninsula in the south-west of the former Soviet Union in Europe, between the Black sea and the Sea of Azov, now a region of Ukraine, was in the news when its Parliament voted to restore its May 1992 constitution in what amounts to a virtual declaration of independence from Ukraine. Crimea, which has a two-thirds ethnic Russian population, was part of Russia until 1954 until it was given to Ukraine as a "gift" by the former Soviet leader, Mr. Nikita Khrushchev.

Dof Lake: Located in Srinagar, it is one of the main attractions of tourists in Kashmir.

Davos: The remote resort in the narrow avalanche-prone Alpine Valley of eastern Switzerland was the venue of the World Economic Forum that brought together top political leaders, economists and business tycoons from across the world to discuss plans of international economic co-operation.

Denver: The capital city of the State of Colorado, U.S.A., was in news, as the G-8 Summit was held in 1997. The nations that took part in the Summit were the US, Great Britain, France, Italy, Japan, Canada, Germany and Russia (which was admitted as 8th member).

Dhaka: The capital of Bangladesh, was in the news when an inaugural Indo-Bangladesh bus service from Calcutta was received here by Prime Ministers of India and Bangladesh on June 19, 1999.

Dharmasthala: It is the famous pilgrim centre, 75 km from Mangalore in South Kanara (Karnataka). The 11th century temple of Lord Bahubali was constructed by the Western Ghats on February 3, 1982.

Dioyutal: This archipelago — called the Senkaku Islands by Japan — lies in the East China Sea well over 100 km south-west of Okinawa and quite close to both the South China coast and Taiwan. A new source of tension in Sino-Japanese relations has cropped with the disclosure in Beijing

on February 26, 1992 of the adoption of a new law by China on the territorial water under which this archipelago was named as China's indigenous territory. The new law empowers the Chinese Navy to remove by force any incursion on the islands or the surrounding waters. The Japanese have protested over this citing historical background and international law according to which it acquired the islands when it annexed Okinawa in 1879. In addition to China and Japan, Taiwan also claims the islands.

Diego Garcia: A small island some 27 sq km in size and 1,600 km south of India's southern tip, is the most important American military air base in the Indian Ocean. Since 1966 when the U.S. signed a treaty with Britain for the use of Diego Garcia, the Pentagon has carried out a number of works to set up a navy and air base on the island.

Digboi: In Assam, it is known for oil field and oil refinery.

Doda: The district of Jammu and Kashmir was in the news for the tough going for administration to combat forces going all-out to rupture inter-community relations in this hilly, difficult terrain. A large number of killings took place in Shadernwah and Kishtwar towns. Villagers living in the remote areas of this district of the Jammu region had to flee their homes under threat of extortion by foreign mercenaries and Kashmiri militants.

Durand Line: It forms the 1920-km border between Afghanistan and Pakistan.

Durban (South Africa): The site of the Non-Aligned Movement Summit held on September 1, 1998.

Durgapur: Located in West Bengal, it is famous for the steel plant.

East Timor: The province in Indonesia witnessed the UN sponsored "popular consultation" (referendum) on August 30, 1999.

Eden Gardens: Located in Calcutta, the scene of memorable sporting triumphs and tragedies, it is one of the finest cricket pitches in the country, encompassing an area second only to the sprawling Melbourne Cricket Ground. It is recognised as among the leading Test venues in the world.

Eiffel Tower: Located in Paris (France) is 985 feet high and was built at a cost of £2,00,000 by Gustav Eiffel; is now used as a wireless communication centre. It turned 100 years old in March 1989.

Ellora: Located in Maharashtra, it is famous for the cave temples and architecture. Kailash temple is situated here.

Empire State Building: Located in New York, it is one of the world's tallest buildings, 1,250 feet high plus a 222 feet television and FM radio transmitting tower. It has 102 storeys and was built in 1931.

Eritrea: Located on the Northeast coast of Africa, the 52nd state of Africa was formally declared Independent from Ethiopia on May 24, 1993 and has been admitted as a member of the United Nations. Eritrea means red and refers to the name to the adjoining Red Sea. The land has had a chequered history. Italy took it away from Ethiopia in the late 1800's and then Britain wrested it away from Italy during the Second World War. In 1952 Eritrea again became part of Ethiopia. Eritreans, however, have long yearned for independence and Eritrea has been functioning as a semi-independent country with its own flag and government for the last two years. In April 1993, the two-and-a-half million people of Eritrea voted for complete independence. Asmara is the chief industrial centre and also the capital of the country.

Emakulam: Located in Kerala, it is the first district to attain 100 per cent literacy in the country.

Fatehpur Sikri: About 35 kms from Agra in Uttar Pradesh, it is of tourist importance. Famous Buland Darwaza is located here.

Gaisal: The railway station in West Bengal, 50 km from New Jalpaiguri where the Guwahati-bound Anand-Assam Express collided head-on with the New Delhi-bound Barapalasa Mail on August 2, 1999 killing at least 300 passengers.

Gang Canal: The lifeline of most of Sriganganagar district of Rajasthan, is also known as Bikaner Canal.

Gateway of India: The 26-metre high stone archway, situated adjacent to the Taj Mahal hotel is Mumbai's famous landmark. A developed precinct and faced erosion from saline air, pollution and other elements over the years. It has been given a new lease of life by the Rs. 1.2 million repair and restoration work. An architectural feat of the colonial times, the gateway was built to commemorate the landing of King George V and Queen Mary on Indian soil on December 2, 1911.

Geneva: The place in Switzerland was in the news when the 87th session of the International Labour Conference under the banner of International Labour Organisation (ILO) was held from June 1 to 17, 1999. It also witnessed the holding of the 83rd International Conference as well as the Conference on Disarmament to finalise the Comprehensive Test Ban Treaty in June 1996. Geneva was the seat of the League of Nations between 1920 and 1946.

Genghis Khan Palace: Archaeologists in the Ningxia autonomous region, just south of the inner Mongolia autonomous region, have found the remains of what could be the palace where the great Mongol leader, Genghis Khan, died. It has been dated back to at least the Yuan dynasty, established by Genghis Khan's grandson in 1271. Historical records show that Genghis Khan, who

conquered China and most of Central Asia, had a palace near Ningxia's Lupan mountains, which he used as a summer retreat.

Ghana: Located near Bharatpur, It is known for the world famous bird sanctuary. Siberian cranes—the large and beautiful migratory birds on the brink of extinction—come to this sanctuary for their annual winter sojourn. It has been renamed as the Keoladeo National Park.

Golan Heights: A 1,675 sq km stretch of terrain, which had, until 1967, served as a promontory from which Arab guerrillas had sniped at Israeli settlements with almost monotonous regularity, is under occupation by Israel which it had seized from Syria in the 1967 war. Israel, which regards the Heights as one of its most important strategic assets, had announced its annexation with the country.

Golconda: Located 11 km from Hyderabad in Andhra Pradesh is a ruined city.

Golden Dwarka: The ancient *Sono Ki Dwarka* (golden Dwarka), the ruling seat of Lord Krishna on the western coast, in Jamnagar district, is to be reclaimed from the Arabian sea with technology imported from The Netherlands. The ancient Dwarka was discovered in the sea by the Marine Archaeological Research Centre, Goa, about one km away from the present temple of the Dwarakadhoosh (Lord Krishna) a few years ago and is about 15 to 50 metres under the sea.

Golden Temple: A famous temple of the Sikhs at Amritsar (Punjab) which was built by Guru Ram Dass, the fourth Guru of the Sikhs.

GoI Gumbaz: Located in Bijapur, Karnataka, is the largest dome of the world. It is known for the famous whispering gallery.

Great Wall of China: Built by successive Chinese emperors over a period of more than 2,000 years from 770 BC to the Ming dynasty (1368-1664) to keep out invaders from the north. Designed

as a defence against nomadic tribes, it has numerous large watch towers. The various sections of the wall total up to 50,000 km in length. The circumference of the earth is 40,000 km. It is the different bits of the Great Wall were put end to end they would easily stretch around the world.

Guam: The thick tropical underbush of Guam was the site of crash of the Korean Air Boeing 747 in 1997 that killed more than 200 people. At least 28 people miraculously survived the crash that took place in the US-governed Pacific Island.

Hague: The Netherlands is the seat of the International Court of Justice.

Haldia: Located in West Bengal, It is famous for huge oil refinery set up in collaboration with Romania and France.

Hampi: It is in Karnataka State and is known for the ruins of the ancient capital of Vijayanagar kingdom.

Hanging Gardens of Babylon: One of the Seven Wonders of the World are terraced gardens of Babylon. These were first planted in 603 BC by King Nebuchadnezzar and are located 95 km off Baghdad.

Harappa: Situated near Montgomery in Pakistan is famous for the ruins of ancient India. Excavations here have brought to light pre-historic buildings of Indus Valley Civilisation of about 3500 BC.

Hauz Khas: The historical monument in Delhi built by Alauddin Khilji in the 14th century has been developed as a cultural tourism complex and was inaugurated on September 18, 1992.

Havana: The capital of Cuba, It is known for cigars manufacturing.

Hazratbal: The white marbled holy shrine, located on the west bank of the Dal Lake in Srinagar, was in the news for being desecrated by separatists and militants in 1993. Its majestic edifice has the sacred hair (*Moo-i-Muqaddas*) of the Prophet Mohammad in the central chamber. It was in the news as Army had laid siege of the shrine to flush out some 50 militants holed up inside. Negotiations failed to get the militants out of the shrine as they had demanded safe passage to Pakistan. They had also threatened to lift the siege of the mosque or face the prospect of a mass upsurge as was witnessed in the wake of the theft of the holy relic kept in this mosque in 1964. Ultimately, the army succeeded in flushing out the militants from the shrine.

Hebron: The last of seven West Bank towns has come under Palestinian control under an agreement between Israel and the PLO after months of acrimonious U.S. brokered negotiations. Israeli troops withdrew from 90 per cent of the volatile town at dawn on January 18, 1997. Israeli soldiers remain in the rest of Hebron to protect the 400 Jewish settlers living in the town of 100,000 Palestinians.

Helsinki: The capital of Finland was in the news when in 1997 US President Bill Clinton and Russian President Boris Yeltsin met in the city for a two-day summit to discuss European security, arms and economic cooperation. The two leaders settled key arm accords, but remained far apart over NATO. Clinton brushed aside Russian objections to NATO enlargement into eastern Europe, declaring it would go ahead in inviting Poland, Hungary and Czech Republic to the military alliance at a NATO summit in July. Russia bitterly opposed NATO's expansion plans, for it would "isolate and threaten" Russia. The two countries agreed to begin another round of nuclear arms reduction talks once Moscow has ratified the START-2 treaty and also preserve the ABM (anti-ballistic missile) treaty of 1972.

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Hiroshima: It is the industrial town of Japan. Once known as the "Venice of Japan" it was destroyed by the first atom bomb dropped on human beings on August 6, 1945. This led to the end of World War II. Known as the "City of Peace," it was the venue of the 12th Asian Games held in October 1994.

Hong Kong : This south-east Asian island, which was leased to Britain for 99 years by China in 1898, was transferred back to China. From July 1, 1997, Hong Kong has become a Special Administrative Region of the People's Republic of China, enjoying a high degree of autonomy.

Humayun's Tomb: It is the historical monument of Delhi. An 18-year-old study of old Persian historical records of the time of Akbar and Humayun has revealed that the architect of Humayun's Tomb was Mirza Ghiyas who came from Bukhara in Central Asia. It has been claimed that the tomb was completed around 1570 AD and King Akbar had first visited his father's tomb that year.

Hyderabad-Secunderabad: This twin-city is the capital of Andhra Pradesh. It is known for the Char Minar, Golconda Fort, Osmania University and Salarjung Museum, which has the richest and most varied collection from different parts of the world. The lake divides the twin-city. It was the venue of the 30th International Film Festival of India from January 10 to January 20, 1999.

Independence Hall: It is located in Philadelphia (U.S.A.); was completed in 1759. The Declaration of Independence was adopted here on July 4, 1776.

Jagannath Temple : The world famous 205-feet temple is located in the holy city of Puri (Orissa). The three deities—Lord Jagannath, Balabhadra and Subhadra—are kept inside the "Garbhagriha" (sanctum sanctorium) of the 12th century majestic edifice. The temple was built in the Kalinga style of architecture is at present under repair by the Archaeological Survey of India as a thick lime coating on its exterior wall had caused much concern to the conservationists.

Jalpur: The capital of Rajasthan is famous for the Maharaja's City Palace, Jai Singh's Observatory, Amber Fort (the ancient capital) and *Hawa Mahal*. Better known in the tourist world as Pink City, the city celebrated its 250th anniversary on November 18, 1777. It was founded on November 18, 1727 by Maharaja Sawai Jai Singh II, the ruler of the erstwhile kingdom of Amber, who was a great warrior, statesman, planner, astrologer and scholar.

Jakarta : The Indonesian capital was the venue of the meeting of the ASEAN Regional Forum (ARF) in July 1996 which lent Delhi the only platform outside the United Nations to participate in multilateral security deliberations.

Jallianwala Bagh: Located in Amritsar (Punjab) was the scene of massacre of innocent Indians by the British General O'Dyer on April 13, 1919.

Jama Masjid: Located in Delhi, it is India's biggest mosque. It was built by Shahjahan.

Jamnagar : Located in Gujarat, it is the "Mecca of fighter pilots". It was in the news when IAF fighters displayed their lethal weapons in a mock attack here. At the Samrat range off the Arabian Sea on the West Coast, the "1000-pound penetrator first and blast later" bomb dropped precisely on target by MiG 21 fighter-bombers. The pilots have been trained at the Tactics and Air Combat Development Establishment, a key element of the premier air base at this port town.

Jamshedpur: It is an industrial centre situated in Bihar; Tata Iron & Steel Co. Ltd. is located here.

Jatkara: The place six kilometres South of Khajuraho is the site of excavation where the ninth century Chandela Temple was found. This 26th temple of Khajuraho is larger than any of the existing ones.

Jawaharlal Nehru Pattan: It is the new name of the Rs. 878-crore Nhava-Sheva port which is located just 10 km from the Bombay harbour and faces the famous Elephanta islands.

Jerusalem: The old and ancient city which was occupied by Israel during 1967 war, is a place of pilgrimage for the Christians, Jews and Muslims. The Al Aqsa mosque and the wailing wall are located here.

Jharia: Located in Bihar, it is famous for the coal industry.

Jinnah House : Originally known as South Court, the bungalow built by Quaid-e-Azam Mohammad Ali Jinnah of Pakistan, on a plot of 5,213 sq. yd at Mount Pleasant Road in Bombay's posh Malabar Hill in 1935 at a cost of Rs. 2 lakh was in the news as the Pakistan Government wanted to acquire the building to house its consulate. The demand has been rejected on various grounds, two of which are that the building is one furlong away from the Maharashtra Chief Minister's residence and that it is a part of Mumbai's heritage as declared by the city's municipal corporation.

Jog Falls: Located in the Karnataka State, these are known for one of the highest waterfalls in the world.

Jowai : Located in Meghalaya, was in the news when a 17-member multinational team found the Krem Um Lawn-Kram Kotsai cave system, near Jowai. The cave-system extended upto 18.7 km surpassing the previous record of 16 km in a cave system located in Vietnam.

Junagarh: One of the most ancient cities, it is located in Gujarat.

Kalga : The site of an atomic power plant in the midst of a tropical rain forest, the 250 sq km area

and the 834-sq km Dandeli Wildlife Sanctuary in Karnataka is now in doldrums because of its "seismic sensitivity", according to environmental activists. Its proximity to major dams and its geological instabilities. It may also turn out to be a security risk because India's largest dam—Seabird—is also being planned just away.

Wapar: Located on the banks of the Tapi, 36 km from Surat in Gujarat, it is the site of India's fifth atomic power project. It was in 1979 when a Chernobyl-type disaster was averted in 1994 by sheer providence.

Andaman and Nicobar Islands: West of Talaimannar, north-east of the Palk Strait, is a little island, a mile in length and less than a quarter mile in breadth. The island was given to Sri Lanka under an agreement in 1974.

Kalpakkam: A place about 60 km from Madras where India's 50 MW experimental fast breeder test reactor is located.

Kalyanpur: The sleepy village in Aligarh district of western Uttar Pradesh has become active with the installation of a 100 kw solar photovoltaic power plant, the largest of its kind in Asia, in April 1993. Before the installation of the plant, Kalyanpur was not approachable even by road.

Kanchenjunga: It is India's highest peak (8,535 metres).

Kanchipuram: Located 76 km south-west of Madras in Tamil Nadu is called the "Golden City". It was the capital of successive dynasties of Hindu rulers of South.

Kandla: Located in Gujarat, it has been developed as a major port; an industrial centre has been set up here.

Karakoram Highway: The 800 km long road, built over the roof of the world as it were, is in the news again after the formal opening of the Khunjerab Pass linking Pakistan occupied Kashmir with Xinjiang (Sinkiang) in China, across the border of Jammu and Kashmir that is an integral part of the Indian Union.

Karbala: The capital of a province by the same name, it is situated about 100 km from Baghdad in Iraq and is known for the sacred Muslim shrine. It was bombed by the U.S.-U.K. forces during the Gulf war in January 1991. The city has its own significance in the history of Islam. It is the place where the last war of Islam was fought in 680 AD.

Kargil: The place in Jammu and Kashmir was in the news when Pakistani infiltrators entrenched on its strategic heights on the Indian side of LoC forcing India to take military action including

bombing by Indian Air Force (IAF) planes on May 26, 1999 to evict the intruders.

Kazima: Iraq had renamed Kuwait city into Kazima, gave it the status of a provincial capital, when it was invaded by Iraq in 1990.

Kaziranga: It is a game sanctuary in Assam. The largest population of Indian rhinos can be seen here. The Kaziranga National Park is situated on the south bank of the river Brahmaputra.

Khadakvasla: Near Pune, in Maharashtra, it is the seat of National Defence Academy.

Khajuraho: It is in Madhya Pradesh and is known for medieval Hindu temples, a place of tourist importance.

Khanna (Punjab): The place was in the news when the speeding Calcutta-bound Jammu-Sealdah Express rammed into the bogies of the Amritsar-bound Golden Temple Mumbai-Amritsar Frontier Mail minutes after they had derailed, 6 km off this town, killing over 200 people and injuring 250, on November 26, 1998.

Khetri: Located in Rajasthan, it is famous for copper complex.

Kinshasa: The capital of Zaire, was recently in the news, as rebel forces of Mr. Laurent Kabila took over the city and reins of governance from the forces of late Mr. Mobutu Sese Seko, who had to flee the country to neighbouring Togo to save his life (Mobutu died of cancer in Morocco on September 8, 1997). A witness to 32 years of brutal dictatorship of Mr. Seko, opposition by Mr. Etienne Tshisekedi and civilian upsurges, the capital city is now under control of Mr. Kabila's forces. Mr. Kabila has announced his Cabinet, where he eliminated the post of Prime Minister and did not accommodate Mr. Tshisekedi, which is turning out to be another volatile issue, as the latter wields enormous popularity among the residents of the city.

Kodaikanal: It is located in Tamil Nadu and a famous hill station.

Kolar: Located in Karnataka is famous for mines.

Kosamghat: Located 20 km south-east of Jabalpur in Madhya Pradesh, was the epicentre of a massive earthquake that registered an intensity of 6 on the Richter Scale on May 22, 1997. The earthquake caused major damages to the city. 40 persons were killed and over 100 injured. The central India quake falls within the Precambrian Narmada Rift Zone, which is more than 600 million years old. The Union Government has released Rs. 10.10 crore from the Relief Fund to help the quake-hit.

Kottayam: The town in Kerala was in the news in June 1989 when all its 70,000 citizens achieved 100 per cent literacy. It is the first country to achieve complete literacy.

Kourou: The place in French Guyana was in the news when India's multi-purpose satellite Insat-2E was launched from Kourou space station on April 3, 1999.

Kovalam: A beach and a tiny village 10 km from Trivandrum is ensconced in the famed Malabar coast where the blue of the sea washes against a verdant green land. It was discovered by the kings of Travancore centuries ago.

Koyali: It is in Gujarat and is known for petrochemical complex.

Koyana: It is in Maharashtra and is known for the hydel power station.

Kozhikode: Located in Kerala, its airport is a virtual goldmine with approximately 250 kg of gold being brought into the State with every flight that comes from the Gulf countries.

Kremlin: A large fortified citadel in Moscow Russia; the secretariat of the Russian Government is located here.

Kuala Lumpur: The capital city of Malaysia witnessed a 12-day sport extravaganza at the 16th Commonwealth Games in September 1998.

Kumbakonam: A small temple town, situated on the banks of river Cauvery, in Thanjavur district of Tamil Nadu, was in the news when 50 persons, including 30 women, lost their lives on the northern bank of the Mahamakham tank on February 18, 1992 when the wall of an old dharamsala collapsed and triggered a stampede. Mahamakham festival is an event of historic and religious significance. This holy festival occurs only once in 12 years and is comparable to the Kumbh Mela and similarly attracts lakhs of devotees from all over India and abroad.

Kunming City: The place in South-West of China was the site of 1999 International Horticultural Expo, the largest of its kind of this century and the first-ever hosted by a developing country. It was declared open by the Chinese President Jiang Zemin on April 30, 1999.

Kurile Islands: Located off Russia's Pacific coast, these were in the news when the massive earthquake that hit northern Japan on October 4, 1994 killed 16 people in the northern disputed islands and triggered tidal wave warnings on both sides of the Pacific. The Kuriles include four small islands at the southern-most edge of the chain over which Japan claims sovereignty. Soviet troops seized the four islands from Japan at the very end of World War II. Tokyo has demanded their return and has refused to sign a peace treaty or offer full-scale economic help to Russia because of the dispute. The Russian Prime Minister, Mr. Viktor Chernomyrdin, has on October 28, 1994 ruled out handing back the disputed islands to Japan.

Kurukshetra: The ancient town located in Haryana was once the battlefield of Mahabharata.

It was here that Lord Krishna had delivered his message of Gita.

Las Vegas: The casino-city of the world, was in news, when the title fight for the World Boxing Association took place. In the richest-ever boxing match, Mike Tyson, bit a piece of Evander Holyfield's ear to get himself disqualified in the third round.

Latur and Osmanabad: The two districts of Maharashtra were in the news when a devastating series of powerful earthquakes virtually ruined Killari and 52 other villages here, as a result over 30,000 persons were killed and about 10,000 injured on September 30, 1993. Intensive rescue and rehabilitation operations were launched both by the State authorities and the Army.

Leh: Located in the frontier region of Ladakh in Jammu and Kashmir.

Lillehammer: The scenic countryside located 180 km north of Oslo (Norway) was the venue of the Winter Olympic Games which opened on February 12, 1994.

Lima: The capital of the Latin American country of Peru, was in news when Peruvian Government commandos rescued 71 hostages from the clutches of Tumac Amaru, a Leftist rebel group which had been waging a guerilla war in Peru since 1987. The daylight assault on April 23, 1997 brought an end to the crisis which began on December 17, 1996, when Tumac Amaru rebels took over the Japanese Ambassador's residence in an attempt to free their comrades held in Peruvian jails. In the assault, one hostage, two soldiers and all the 14 rebel captors died.

Limassol: Located in Cyprus, it was the venue of the Commonwealth Heads of Government Meeting held from October 21, 1993. The Commonwealth leaders, along with their spouses, visited Paphos, the legendary birthplace of Goddess Aphrodite, for their retreat.

Lop Nor: In the Sinkiang district of China, it is known for China's nuclear explosions.

Lord's: The traditional headquarters of cricket and scene of some of the game's most compelling moments is located in London.

Los Angeles: Located in the California State, it is a city on America's warm Pacific Ocean coast in the west. It hosted the Olympic Games in 1984 for the second time in five decades. It hosted the 10th Olympiad in 1932. It was in the news when a violent earthquake struck here, crumbling treeways into rubble, collapsing buildings with a savage power and igniting fires across a vast swath of the city. At least 27 persons were killed and hundreds injured. Houses and property of more than 30,000 people of Indian origin suffered damage.

Lothal: It is in Gujarat. Recent archaeological excavations conducted at this place have led to traces of Indus Valley Civilisation.

Lumbini: Located 240 km west of the Himalayan Kingdom's capital, Kathmandu, the birthplace of Lord Gautam Buddha, was in news in 1996 when it was reported that an international team of scientists has discovered the birth chamber of Buddha under the ancient Mayadevi Temple here. The relics were found 4.5 metres (15 feet) under the temple.

Maastricht: The Dutch town was the venue of the summit of European Community leaders on December 11, 1991 who agreed to a historic political and monetary union treaty.

Madurai: A town in Tamil Nadu, famous for the Meenakshi Temple, also a handloom and cotton textile centre.

Mahabaleshwar: It is the principal hill station of Maharashtra State.

Mahabalipuram: Located about 55 km south of Chennai, this port city of Tamil Nadu is known for the rock-cut temples; the famous Arjuna Rath, Draupadi Rath and Dharmaraja Chariot are located here. The Pallava dynasty played a prominent role in giving to Mahabalipuram the temples which today attract thousands of tourists from all over the globe.

Male: The capital of Maldives was the venue of the fifth summit of the South Asia Association for Regional Cooperation from November 21 to 23, 1990. The 1990 summit coincided with the 25th anniversary of independence of the Maldives.

Malpa: The place witnessed a major landslide at 3 am on August 18, 1998, that killed over 300 persons, including the entire 12th batch of pilgrims on way to Kailash Mansarovar.

Maldives: The picturesque island country located in the Indian Ocean, with an area of just 300 sq km and capital at Male, celebrated the silver jubilee of its independence beginning on July 24, 1990. After being under British colonial rule since 1887, the erstwhile Sultanate achieved independence on July 26, 1968.

Mandapetta: Located near Devarpalli village, 60 km from Rajahmundry, in Andhra Pradesh, the ONGC's oil field was in the news in February 1997, when a serious fire broke out here. It took more than a week to put out the fire.

Marrakesh: The ancient city of Morocco was the venue of the GATT meet where 120 nations gathered in April 1994 to sign the Uruguay Round trade liberalisation accord.

Mathura: The holy city in Uttar Pradesh is known for the birthplace of Lord Krishna. It is famous for the Hindu Temples and oil refinery.

Mawsynram: Located on the crest of the southern range of the Khasi hills in Meghalaya, 16 km west of Cherrapunji, is now the rainiest place in the world. According to the researchers at the Indian Meteorological Department, the average

annual rainfall exceeds that in both Cherrapunji and Waialeale in Hawaii, which was reported to have received more than Cherrapunji.

Mazar-e-Sharif: Located in northern Afghanistan, a stronghold of warlord General Abdul Rashid Dostum, was captured by the Taliban militia on May 24, 1997. Its capture completed a three-year campaign to unite Afghanistan under the Taliban. General Dostum, ousted from his fiefdom has fled to the Turkish capital, Ankara. With the fall of the city, virtually all of Afghanistan, barring a few small pockets of resistance, has come under one regime for the first time since the Soviet army ended a 10-year occupation in 1989.

Mecca: The Muslim pilgrim centre in Saudi Arabia was in the news when the stampede in the 500-metre long tunnel here killed over 1,400 Haj pilgrims on July 2, 1990. The present tragedy was the third major disaster in the last three years.

Meenakshi Temple: Located in Madurai (Tamil Nadu) is a famous Hindu temple.

Melbourne: It is the first city of the state of Victoria and the second largest in Australia. Its great rival, Sydney, is Australia's biggest, brash and most bustling city.

Mina: Located near Mecca in Saudi Arabia, it was in the news when hundreds of Haj pilgrims were killed or injured in a ravaging fire on April 15, 1997. Those died were mostly from India, Pakistan and Bangladesh.

Mindanao Island: Philippines' second largest island was in the news when hundreds of soldiers mutinied and declared independence from the President, Mrs. Corazon Aquino's government on October 4, 1990. The mutineers seized the city of Butuan and later took over the military headquarters at Cagayan de Oro, a major port of about 200,000 people about 800 km south of Manila. The armed forces went on nationwide alert after the mutiny and Mrs. Aquino appealed to the Filipino people to support her Government.

Mohenjo-Daro: Located 400 km north of Karachi, it is in Larkana district (Sindh) of Pakistan. Excavations conducted at this place during the British period led to traces of Indus Valley Civilisation, reported to be about 5,000 years old.

Monte Carlo: It is located on the Riviera in France and is known as a gambling centre.

Mount Abu: It is a hill station on the Aravalli range in Rajasthan and is famous for Dilwara Jain temples. The Central Police Training Centre is located here.

Mount Unzen: Located some 1,000 km south-west of Tokyo and east of Nagasaki in western Japan, the volcano in the Mount Unzen complex erupted first on June 3, 1991 and took a toll of 38 persons.

Mughal Gardens: The Capital's largest and most beautiful garden, located in the President's Estate, is opened to the public in February every year. In the days of the Raj, the garden was kept solely for the personal pleasure of Lady Hardinge, the Vicereine at whose behest it was built by Edward Lutyens.

Mumbai: It is the capital of Maharashtra State and is known as the Gateway of India. It has natural harbour and is known for Prince of Wales Museum, aquarium, planetarium, oil refineries and fertiliser factory. Elephanta, known for rock-cut temples is located near it. The seven-island city was given in dowry to King Charles II of England on his marriage to Catherine of Aragon by her brother King Ferdinand of Portugal.

Mussoorie: A hill station in Uttar Pradesh and the seat of the Lal Bahadur Shastri Institute of Administration, which trains Group 'A' Government officials.

Nagano: Japanese city which hosted the 18th Winter Olympics in February 1998.

Nalanda: It is located 97 km south-east of Patna in Bihar and is known for the Buddhist temples and Buddhist University.

Namrup: It is located in Assam and is known for public sector fertiliser factory.

Nandigram: Located about 20 km from Ayodhya in U.P., the sleepy village was in the news when a ritualistic function of *paduka poojan* was held here on September 27, 1992. Thousands of *padukas* (wooden slippers)—supposed to symbolise Lord Ram's *padukas* which his brother Bharat "enthroned" to rule his empire during the 14 years of Ram's exile—were sanctified for distribution all over the country.

Narayanpur (Bihar): The place in Jehanabad District in Bihar was in the news when 12 people were shot dead by the Ranvir Sena on February 10, 1999.

Narora: It is situated near Bulandshahr in U.P. on the banks of the Ganga river, India's fourth atomic power station was commissioned here in March 1989. The other three are Tarapur in Maharashtra, Rawatbhata in Rajasthan and Kalpakkam in Tamil Nadu.

Natal: The Zulu-dominated Natal province of South Africa was in the news when the South African President, Mr. F.W. de Klerk, declared a state of emergency here on March 31, 1994 to quell violence, setting up a confrontation with a Zulu nationalist leader, Mr. Mangosuthu Buthelezi, who opposes the country's first all-race April 26-28 election. Mr. Buthelezi belongs to the largest tribe in South Africa, Zulu, who are seven million in a total Black population of 30 million.

Nazareth: Located in northern Israel, it is the childhood town of Jesus. Mentioned only three

times in the Christian scriptures, it is gearing to assert its role as the historic site of annunciation and the place where Jesus lived for much of his turbulent ministry. While Christians and non-Christians are both familiar with the town, Nazareth has been traditionally eclipsed by its Palestinian sister city, Bethlehem, which has remained a tourist 'must' by virtue of its romantic roots in Christian consciousness as the cherished birthplace of the Messiah.

Nehru Square: The intersection of the Soviet Capital where Vernadsky Avenue was rechristened "Nehru Plashed" or Nehru Square.

Nepanagar: In Madhya Pradesh, it is known for the newspaper factory which is owned by the Government.

Neyveli: Located in Tamil Nadu, it is known for lignite project and monazite factory.

Nhava Sheva: It is the new port for Mumbai. Renamed Jawaharlal Nehru Port, it is the most modern sea port in the country.

Nile: The world's largest river (6,690 kms), which flows out of Lake Victoria in the heart of Africa.

Nirmal Hriday: Located in Kallighat in Calcutta, it is Mother Teresa's celebrated home for the dying.

Nuwara Eliya: The hill resort in Sri Lanka was the venue of SAARC Foreign Ministers conference which began on March 18, 1999.

Okinawa: The largest of the Ryukyu Islands in the North Pacific, located south-west of Japan, was taken by US forces in April-June 1945 in the last major amphibious campaign of World War II. The US had returned the islands to Japan in 1972. In the referendum held in September 1996, Okinawans have made it clear that the US soldiers are unwanted guests on the idyllic islands.

Olympia: The birthplace of the ancient Olympic Games is a valley about 17 kilometres from Pyrgos, a town famous for folk art. In ancient times, it was an important centre for religion, politics and athletics. All the buildings in Olympia were either for worship or for games. The religious buildings were clustered in Altis or the Sacred Grove. They included the temples of Zeus and Hera. The gymnasiums were just outside the Altis. Today all this lies in ruin.

Orissa: The State was in the news when a super cyclonic storm and floods devastated most parts of Orissa killing over 9,000 people and rendering thousands homeless on October 29, 1999.

Panama Canal: The 40-km canal connects the Atlantic and Pacific Oceans and runs between North America and South America.

Pangong Tso: Located on the Indo-Chinese border in Ladakh at a height of over 4,300 metres, it is world's highest salt water lake.

Panna: It is located in Madhya Pradesh and is famous for diamond mines.

Paradeep: Located near Cuttack in Orissa is India's important deep sea port.

Pasadena : This American city in the State of California was in news when for the first time a U.S. spacecraft transmitted the images from Mars. The landing on Mars has shown the terrain of Mars marking the beginning of a series of further exploration of Mars. Scientists of Pasadena hope that soon they will be able to bring back Martian rocks and soil for analysis. The spacecraft that has landed on Mars is also equipped with instruments for recording weather conditions.

Patliputra: The ancient name of Patna, the capital of Bihar.

Pearl Harbour : The 50th anniversary of the fateful attack on the U.S. base, which drew the United States into World War II, was observed on December 7, 1991. On this day in 1941, the American people never expected an attack from the north Hawaii. Japan bombed Pearl Harbour even before Washington was told of the declaration of war. The attack from the Japanese point of view was an act of desperation—an attempt to get into a good position in the forthcoming war.

Pentagon: It is situated in Washington, D.C., U.S.A. It is a five sided building and the secretariat of the American Defence Department.

Perambur: Located near Chennai in Tamil Nadu is known for the Integral Coach Factory where passenger coaches are manufactured.

Pimpri: In Maharashtra, it is known for the penicillin factory.

Pisa: A town in Italy. It is famous for the Leaning Tower of Pisa which is one of the wonders of the world.

Pokhran: Located in Jaisalmer district of Rajasthan. India's first nuclear explosion was carried out here on May 18, 1974. It witnessed air-to-air firing display of the Indian Air Force's JJ-30s and Mirage 2000 as part of *Vayu Shakti* 99 exercise on March 7, 1999.

Porbander: A picturesque coastal town by the Arabian Sea and located in Gujarat is the birthplace of Mahatma Gandhi.

Pristina : The capital of Kosovo was one of the places in Yugoslavia where NATO bombed the Serb forces garrisoned in the place continuing military action against the Albanians in Kosovo in May 1999.

Puri : Orissa's coastal city witnessed the annual car festival (Rath Yatra) of Lord Jagannath on June 21, 1993. Contrary to apprehensions, all rituals of the three principal deities—Lord Jagannath, Balabhadra (Jagannath's elder brother) and Subhadra (their sister)—were completed in the scheduled time before they were taken on a 10 day sojourn to the Srigundicha temple along with three-km long Badadanda.

Qutab Minar: The world's tallest free-standing stone tower is located in the South Delhi. The historic five-storeyed tower with a height of 72.54 metres has a total of 387 steps, of which 154 steps lead up to the first storey. Qutab Minar was built in 1193 by Qutub-ud-Din Aibak immediately after the capture of the city. Two storeys were built during his life time and the rest was completed by Altamash, his son-in-law, in 1230 after his succession. Rising up, it tapers from a diameter of 14.32 metres at the base to about 2.75 metres at the top. The Minar's first storey is about 32 metres high.

Rio de Janeiro : One of the largest cities of Brazil became famous as it was the venue of the 12-day Earth Summit, officially called the United Nations Conference on Environment and Development (UNCED), which opened on June 3, 1992.

Raj Ghat: The 'Samadhi' of the Father of the Nation, Mahatma Gandhi, it is located on the banks of river Yamuna in Delhi.

Rajgir: Located 13 km south-west of Nalanda in Bihar is an important place of pilgrimage for Buddhists. Buddha preached at Rajgir, and so did Mahavir, the great preceptor of the Jains.

Rajouri (Jammu & Kashmir) : Twenty people were killed by militants in Rajouri in Jammu region on February 19, 1999.

Rana Pratap Sagar: In Rajasthan, it is known for the atomic power plant.

Ranjit Sagar Dam : Located at Thein in Gurdaspur district of Punjab, the Thein Dam (now renamed as Ranjit Sagar Dam) was in the news when the first stage of the project was completed and on the 524th birth anniversary of Guru Nanak Dev on November 29, 1993, the Punjab Chief Minister, Mr. Beant Singh, signalled to divert the waters of the Ravi through tunnels and thereby brought the much-awaited dam close to completion.

Ranthambore: Located in Sawai Madhopur district of Rajasthan, it is the famous wildlife sanctuary.

Rashtrapati Bhavan: Located in New Delhi, it is the residence of the President of India. It was built by Edwin Lutyens for a ruler in the true colonial sense.

Red Square: It is an open ground attached to Kremlin in Moscow and is used for processions and demonstrations. Lenin's mausoleum is located here.

Renukoot: Located in Mirzapur District of Uttar Pradesh, is known for Hindustan Aluminium Factory.

Rock of Gibraltar : Located in the middle of the Hussain Sagar Lake in the 400-year-old city of Hyderabad, it is the place where the world's largest monolithic granite structure, the 350-ton statue of Lord Buddha was raised to the 90-degree position on December 10, 1992. It was on March 10, 1991

that the statue was to be installed at the site under the *Buddha pumima* project, but the installation ceremony did not prove to be auspicious. The barge carrying the statue leaked and sank into the murky waters of the lake.

Rustaq: A city in North Afghanistan which experienced a powerful earthquake in February, 1998 killing 4,000 persons.

Sabarimala: A famous pilgrim centre situated on a hilltop amid sylvan surroundings in Kerala. About 30 million devotees visit this shrine, the abode of Lord Dharmasastha, during the two-month *manadalapooja-makaravillaku* season (November to January) every year. It witnessed a tragic accident when 52 people died in a stampede on January 14, 1999.

Sabarmati: Situated near Ahmedabad in Gujarat, it is famous for Sabarmati Ashram of Mahatma Gandhi.

Sagar Island: It is located at the confluence of the Ganga and the Bay of Bengal.

Sahar: It is the international airport of Mumbai—an extension of the Santa Cruz airport, which handles only domestic flights now.

Sambhar: It is a salt water lake in Rajasthan.

San'a: The capital of Yemen was in the news when at least 15 people were reported killed and 80 injured as a Scud missile slammed into a densely populated area here on May 23, 1994 as rival troops from the North and South continued a bloody three-week-old war.

Sanchi: Located 45 kms from Bhopal in Madhya Pradesh is the site of the most extensive Buddhist remains in India. Its stupas constitute some of the oldest buildings in India.

Sarajevo: The capital of Bosnia was in news, when Pope John Paul II appealed in a historic mass on April 13, 1997 for reconciliation and love to triumph in the country. The Pope went ahead with his trip to Bosnia despite the discovery of mines, plastic explosives and detonators under a bridge along his scheduled route to Sarajevo.

Sariska: Located about 37 km from Alwar in Rajasthan, it is known for the wildlife sanctuary in the lap of Aravalli range.

Sarnath: It is near Varanasi in Uttar Pradesh and is a famous Buddhist pilgrim centre. Gautam Buddha preached his first sermon here. Deer Park and Ashoka Pillar are located here.

Seattle: Located on the Blake island in the United States, it was the venue of the first Asia-Pacific Economic Cooperation summit where leaders from 14 Asian and Pacific countries, including the United States, met in November 1993.

Sevastopol: The Crimean Port, where the most important Black Sea fleet of the former Soviet Union is stationed and on which both Russia and Ukraine have laid claim, has been retained by Russia.

Shankarbigha (Bihar): The village in Jehanabad, some 100 km south of Patna, was in the news when 21 people were massacred by the outlawed Ramvir Sena on January 25, 1999.

Shakti Sthal: Located near Rajghat in Delhi, it is the Samadhi of Indira Gandhi which has been developed as a greenwood memorial to the slain Prime Minister.

Shantlniketan: Located in Calcutta is known for the Vishwa Bharati, the university founded by Dr. Rabindranath Tagore which is a Central University.

Sharjah: Located in the United Arab Emirates, it was the venue of the Australasia Cup cricket tournament in April 1994. Six nations participated in the tournament. Pakistan defeated India to win the cup.

Sharm-El-Sheikh: The Red Sea Resort in Egypt was in the news when Israeli Prime Minister, Mr. Ehud Barak and Palestinian leader, Mr. Yasser Arafat signed a revised Wye River accord agreement on September 5, 1999.

Shatt-al-Arab: (The breast of the Arab, in Arabic) It is one of the world's ancient waterways which has witnessed the ebb and flow of civilisations on one of the early sites of human settlements in Mesopotamia. An offspring of two illustrious rivers, the Tigris and the Euphrates, the Shatt-al-Arab empties itself in the Persian Gulf.

Shillong: The capital of Meghalaya; a hill station in the Khasi and Jaintia hills; famous for oranges and tea.

Shravanabelagola: The well-known tourist centre in Karnataka was transformed into a throbbing city in December 1993 when millions of devotees converged there to participate in the spectacular ceremonies of the Mahamastakabhisheka (sacred head anointing ceremony) of the magnificent 1,012-year-old 58-foot-high granite monolithic statue of Gomateshwara Bahubali on December 19, 1993. Shravanabelagola nestles between the twin hillocks of Chandragiri and Vindhyagiri, its scenic beauty enhanced by the shimmering waters of a lake in the foreground from which the place derives its name.

Siachen Glacier: Located in Ladakh, it is the longest and largest glacier in the Himalayas. Situated at a height of 18,000 feet, it is located on the southern watershed of the Karakoram highway which links the Chinese province of Sinkiang with both Pakistan and China. Having some of the highest peaks in the world, it is 74 km in length and is 2 to 8 km in width at various places.

Singapore: The City-State was in the news where the ministerial meeting of the ASEAN Regional Forum (ARF) took place on July 26, 1999.

Sivakasi: Located in Sattur taluk, Ramanathapuram district of Tamil Nadu, it is famous for the matches and cracker factories.

Somnath Temple : Located about 210 km from Rajkot in Gujarat, the magnificent shrine of Vedic times, the temple was subjected to total destruction a number of times by the foreign invaders from time to time.

South Col : Once a pristine place high in the laps of Mount Everest, is today the world's highest junkyard. For the past few years, South Col, situated at a dizzying height of 7,981 metres (Everest summit is 8,848 metres), had been nicknamed the highest junkyard in the world because of the garbage, used tins and other materials left behind by successive expeditions from 1920 onwards.

Sriharikota: The tiny island on India's east coast in Andhra Pradesh houses the country's premier space launch centre. It was in the news when PSLV-C2 launched India's IRS-P4 satellite and two other foreign satellites from Germany and South Korea here on May 26, 1999.

Sriperumbudur : A temple town in Tamil Nadu was the place where the former Prime Minister, Mr. Rajiv Gandhi, was assassinated. It is the birth place of Saint Ramanuja—the eleventh century Hindu philosopher and proponent of the concept of 'Visishtadvaita' (qualified monoism), venerated by the Vaishnavites as the incarnation of Lakshmana and Balarama in the respective yugas. The town finds pride of place as one of the most sacred pilgrimage centres in any Vaishnavite's tour itinerary.

Statue of Liberty: The 151-foot tall copper statue of Miss Liberty is located on the Liberty Island in New York harbour. Presented to the U.S. by France, it was designed by F.A. Bartholdi and unveiled in 1886.

Straits of Hormuz: The narrow strip of water that connects the Persian Gulf and the Gulf of Oman and the world beyond. Hormuz is as narrow as the Suez.

Subic Bay Naval Base : The American base in the Philippines was handed over to Philippines on November 24, 1992, marking the end of nearly a century of American military involvement in the country.

Sukhna Lake: One of the best known beauty spots of Chandigarh.

Sumatra : The island of Indonesia was in the news when it was slammed by a powerful earthquake killing about 135 persons and reducing many buildings to rubble. The hardest hit area is believed to be the province of Lampung, on south-eastern Sumatra, which is about 200 km north-west of Jakarta.

Surat : The 'diamond city' of Gujarat was gripped by the epidemic of pneumonic plague in September 1994 which claimed over 75 lives and triggered off an unprecedented exodus from the city. The

epidemic also spread to other States, after its residents moved to other places.

Sydney : Australia's biggest city with population of 3.7 million has been chosen as the city to host the Summer Olympic Games in the year 2000 (September 16-October 1) over four other cities. Sydney's victory, after unsuccessful bids by Australia for the 1992 and 1996 games, results from steady insistence that the harbour city could provide state-of-the-art infrastructure and cater best to the needs of athletes. It is only the second time in Olympic history that the games will be staged in the southern hemisphere, the first being Melbourne in 1956.

Taiwan : A massive earthquake measuring 7.6 on Richter Scale rocked it on September 21, 1999 killing more than 1,600 people and injuring over 3,000 people.

Taj Mahal: Located near Agra, the marble-stone monument was built by Mughal Emperor Shahjahan in memory of his favourite wife Mumtaz Mahal.

Tarapore: It is near Mumbai, in Maharashtra, and is known for India's atomic power station.

Taramani : Named after Ms. Jayalalitha, the former Chief Minister of Tamil Nadu, the 'film city' is equipped with a state-of-the-art technology, including a Rs. 5 crore colour processing laboratory. It is the only place in the country to provide filmmakers and videoproducers all the facilities for film making under one umbrella. It has ready-made locales, video and pre-view theatre, including advanced shooting facilities, underwater filming, computerised audio-visual equipment, cameras, editing and dubbing facilities as well.

Taxila: It is in West Pakistan. Excavations conducted at this place during the British period led to traces of Indus Valley Civilisation. It was famous for Taxila University, the seat of Buddhist culture.

Temple Mount : One of the holiest shrines of both Muslims and Jews is located in Jerusalem. In 1990, in the worst violence since the Intifada began, 21 Palestinians were killed and about 150 injured in bloody clashes with Israeli troops around the sacred place. It was the worst bloodshed in the holy city since it was captured in 1967.

10 Downing Street : The world's best known postal address in London and the residence of the British Prime Minister is now 250 years old. It was built by George Downing, a 17th century adventurer.

Thumba: It is in Kerala State and is known for the rocket launching station.

Tin Bigha Corridor : The area located in north Bengal, under an agreement reached between India and Bangladesh, was leased out to Bangladesh for passage from June 26, 1992. This marks the resolution of an issue that had become the subject of political controversy and court battles in India.

The Indo-Bangladesh land boundary agreement, signed in 1974, had provided for leasing by India to Bangladesh an area of 178 metres by 85 metres near Tin Bigha to enable that country to have access to Dahagram and Angarpota.

Tirupati: It is in Andhra Pradesh and is known for Sri Venkateshwara Temple. The hill temple typifies the early Dravidian architecture and is one of the finest in the South.

Tower of Victory: Located in Chittor, Rajasthan, was built by Rana Kumbha to commemorate his victory. A marble monument consists of 9 storeys and is 122 feet high.

Trombay: Located in Mumbai (Maharashtra State), is known for the oil refineries and atomic reactors, a fertiliser factory is also established here.

Turkey: More than 12,000 people were killed in a devastating earthquake (6.7 on Richter Scale) in 1999.

Ujjain: An ancient city in Madhya Pradesh; was the capital of King Vikramaditya; is famous for Mahakaleshwar Temple.

Vailankanni: A small sleepy fishing hamlet, about 10 km from Nagapattinam, is the site of the 400-year-old Vallankanni church built by Portuguese navigators. It is dedicated to Virgin Mary but many Hindu practices are followed. It stands today as a shining example of religious and communal harmony.

Vancouver: Nestled against the mist shrouded mountains of the Coast Range and sitting astride the crossroads of Asia and North America, the third most populated city of Canada served as a scenic and fitting site for the first formal meeting of the American President, Mr. Bill Clinton, and the Russian President, Mr. Boris N. Yeltsin, on April 3 and 4, 1993.

Vatican: It is the official residence of the Pope of Rome, the ecclesiastical head of the Roman Catholic Church. Vatican City State is an independent State with a population of about 1,000 and has an area of 0.44 km.

Victoria: Canada's most western province was the venue of the 15th Commonwealth Games held from August 18 to 28, 1994. More than 3,500 athletes from record 64 nations participated in the games.

Victoria Memorial: This museum located in Calcutta was built in memory of Queen Victoria and houses an art gallery.

Vidyasagar Setu: The second Hooghly bridge linking Calcutta and Howrah which is named after Ishwar Chandra Vidyasagar was inaugurated on October 10, 1992. Hailed as a engineering marvel, it took 20 years for this 823 metre cable stayed girder bridge, said to be the largest in Asia, to be constructed to its present shape.

Vigyan Bhavan: Located in New Delhi, the premier convention centre of the country which was gutted in a massive fire in April 1990, has been

raised from the ashes after three-and-a-half years at a cost of Rs. 25 crores in reconstruction. The new-look conference venue, besides three committee rooms, two conference rooms and a preview theatre, now has a plenary hall with a seating capacity of 1,285 seats, which will function as a dedicated conference hall.

Vijay Ghat: Situated on the banks of Yamuna in Delhi Vijay Ghat is the Samadhi of India's former Prime Minister, Shri Lal Bahadur Shastri.

Visakhapatnam: In Andhra Pradesh; is a big harbour on the eastern coast of India, is famous for the ship building industry and oil refinery.

Vypeen Island: Located off Kochi in Kerala is the site where 78 mw power-from-garbage-waste project is proposed to be located. The project Gazel, as the Vypeen project has come to be called, is attractively packaged. It comes virtually free, with more than a third of the garbage required to produce the biogas and electricity coming from the east coast of the United States.

Wagah Border: The border between India and Pakistan was in the news when Prime Minister, Mr. Atal Behari Vajpayee crossed the border to enter Pakistan by bus as part of his peace initiative with India's neighbour on February 20, 1999.

Wall Street: The financial nerve centre of global scrips trading, it is a street in the southern section of Manhattan in New York city where all the main financial institutions of the United States are located. It houses the New York Stock Exchange and is also known as "depression row".

Walvis Bay: The port enclave, the only deep-water harbour along Namibia's 1,130 km coast, was handed over to Namibia by South Africa on February 28, 1994 after 84 years of rule by Pretoria. It was annexed by the British into the Cape Colony in 1884 as Germany formally colonised the rest of Namibia. When the union of South Africa was formed in 1910, Walvis Bay and its 12 small offshore islands were incorporated as part of South Africa.

Washington D.C.: The place was in the news when the 50th anniversary of NATO Summit was celebrated there on April 23, 1999. It also witnessed the signing of the Interim Peace accord between Prime Minister Mr. Benjamin Netanyahu of Israel and Palestinian leader Mr. Yasser Arafat in White House on October 23, 1998.

Waterloo: Located in Belgium is the place where the famous battle of Waterloo was fought between the British and the French. French had lost the battle and this led to the end of Napoleon's power.

White Hall: It is located in London and is the seat of British Government offices. It was earlier the official residence of Queen of England.

White House: The official residence of the American President since 1800 AD stands on 13 acres on the south side of Pennsylvania Avenue in

Washington, D.C. It was designed by James Hoban, an Irish-born architect and constructed in 1792. President John Adams was the first President of America to live here.

Wimbledon: Located in London is known for the lawn tennis courts.

Windhoek: The capital city of Namibia hosted the 44th annual Miss Universe pageant. Eighty-two beauties from around the world participated to become Miss Universe 1995. The pageant was held for the first time in Africa's 43-year history in the south-western country of Namibia.

World Trade Centre: Located in New York, it was in the news for bomb blasts. The alleged ring

leader of the terrorist gang that bombed the centre was arrested overseas. It was reported that Iraq had funded the blast.

Yellowstone: U.S.A.'s oldest and largest national park, it has about 3,000 geysers and hot springs.

Zepa: The UN-designated safe area, along with Srebrenica, in Eastern Bosnia, was in the news in July 1995 when several thousands of Muslims were driven out by the Bosnian Serbs from these "safe havens". Zepa is one of three enclaves—the other two being Srebrenica and Gorazde—in Eastern Bosnia that have kept local Serbs from fully controlling the region, which borders Serbia.

8. Sobriquets

Bengal's sorrow	Damodar River	Land of Golden Pagoda	Burma (Myanmar)
Blue Mountains	Nilgiri Hills, India	Land of Lilies	Canada
Britain of the South	New Zealand	Land of Maple	Canada
City of Golden Temple	Amritsar, India	Land of Thousand Lakes	Finland
City of Palaces	Calcutta, India	Land of Morning Calm	Korea
City of Skyscrapers	New York, U.S.A.	Land of Midnight Sun	Norway
City of Dreaming Spires	Oxford, England	Land of Five Rivers	Punjab, India
City of Golden Gate	San Francisco, U.S.A.	Land of Cakes	Scotland
City of Seven Hills	Rome, Italy	Land of White Elephant	Thailand
City of Magnificence	Washington D.C., U.S.A.	Land of Thunderbolt	Bhutan
Distances	Belgium	Never, Never Land	Prairies, N. Australia
Cockpit of Europe	Hawang Ho	Pearl of Antilles	Cuba
China's Sorrow	Africa	Pillars of Hercules	Strait of Gibraltar
Dark Continent	Ireland	Pearl of the Pacific	Guyana/Port of Ecuador
<u>Emerald Island</u>	<u>New York, U.S.A.</u>	Pink City	Jalpur, India
<u>Empire City</u>	<u>Rome, Italy</u>	Playground of Europe	Switzerland
<u>Eternal City</u>	<u>Lhasa, Tibet</u>	Queen of the Arabian Sea	Cochin, India
<u>Forbidden City</u>	<u>Bab-el-mandab, Jerusalem</u>	Quaker City	Philadelphia, U.S.A.
<u>Gate of Tears</u>	<u>Bangalore</u>	Queen of the Adriatic	Venice, Italy
Garden City of India	Mumbai	Roof of the World	Pamirs, Central Asia
Gateway of India	Broadway, New York, U.S.A.	Rose-pink City	Jalpur
Great White Way	Egypt	Sorrow of Bengal	River Damodar, West Bengal
<u>Gift of Nile</u>	<u>Kent, England</u>	Sorrow of China	River Hwang Ho, China
<u>Garden of England</u>	<u>Aberdeen, Scotland</u>	Spice Garden of India	Kerala
<u>Granite City</u>	<u>Atlantic Ocean</u>	Sick Man of Europe	Turkey
<u>Hearing Pond</u>	<u>Palestine</u>	Sugar Bowl of the world	Cuba
Holy Land	Korea	Venice of the East	Cochin, India
Hermit Kingdom	Australia	Venice of the North	Stockholm, Sweden
Island Continent	Bahrain	White City	Belgrade, Yugoslavia
Island of Pearls	Madagascar	Windy City	Chicago, U.S.A.
Island of Cloves	Gibraltar	White Man's Grave	Guinea Coast
Key to the Mediterranean	Australia	World's Loneliest Island	Tristan da Cunha
Land of Golden Fleece	Australia	World's Bread Basket	Prairies of N. America
Land of Kangaroo			

9. Honours And Awards : National

REPUBLIC DAY HONOURS AND AWARDS

Bharat Ratna and other National Honours and Awards : Bharat Ratna and other national honours and awards are presented on Republic Day in recognition of exceptional and distinguished services of high order in any field.

For the fifth consecutive year (i.e., from 1993 to 1997) the country's highest civilian awards such as Bharat Ratna, Padma Vibhushan, Padma Bhushan and Padma Shri were not presented on the Republic Day.

The decision not to present the civilian awards in 1994 was taken in view of petitions pending in various courts questioning the advisability of conferring of such awards and the Supreme Court's stay proceedings on those petitions. These awards were restored by the Supreme Court in December, 1995.

Bharat Ratna: The award is given for exceptional work of the advancement of art, literature and science, and in recognition of public service of the highest order.

The decoration is in the form of a *peepal* leaf, about 5.8 cm long, 4.7 cm wide and 3.1 mm thick. It is of toned bronze. On its obverse is embossed a replica of the sun, 1.6 cm in diameter, below which the words "Bharat Ratna" are embossed in Hindi. On the reverse are State emblem and the motto, also in Hindi. The emblem, the sun and the rim are of platinum. The inscriptions are in burnished bronze.

The following have received this award so far :

- (1) C. Rajagopalachari (1954)
- (2) S. Radhakrishnan (1954)
- (3) C.V. Raman (1954)
- (4) Jawaharlal Nehru (1955)
- (5) Bhagwan Das (1955)
- (6) M. Visweswaraiya (1955)
- (7) Govind Ballabh Pant (1958)
- (8) D.K. Karve (1958)
- (9) B.C. Roy (1961)
- (10) P.D. Tandon (1961)
- (11) Rajendra Prasad (1962)
- (12) Zakir Hussain (1963)
- (13) P.V. Kane (1963)
- (14) Lal Bahadur Shastri (Posthumous) (1966)
- (15) Mrs. Indira Gandhi (1971)
- (16) V.V. Giri (1975)

- (17) K. Kamaraj (Posthumous) (1976)
- (18) Mother Teresa (1980)
- (19) Vinoba Bhave (1983)
- (20) Khan Abdul Ghaffar Khan (1987)
- (21) M.G. Ramachandran (Posthumous) (1988)
- (22) B.R. Ambedkar (Posthumous) (1989)
- (23) Dr. Nelson Mandela (1990)
- (24) Morarji Desai (1991)
- (25) Vallabhbhai Patel (Posthumous) (1991)
- (26) Rajiv Gandhi (Posthumous) (1991)
- (27) Maulana Abul Kalam Azad (Posthumous) (1992)
- (28) J.R.D. Tata (1992)
- (29) Satyajit Ray (1992)
- (30) Gulzari Lal Nanda (1997)
- (31) Mrs. Aruna Asaf Ali (Posthumous) (1997)
- (32) M.S. Subbulakshmi (1997)
- (33) A.P.J. Abdul Kalam (1997)
- (34) C. Subramaniam (1998)
- (35) Jayaprakash Narayan (1998)
- (36) Amartya Sen (1999)
- (37) Ravi Shankar (1999)
- (38) Gopinath Bordoloi (Posthumous) (1999).

Padma Vibhushan : The award is given for exceptional and distinguished services in any field including service rendered by government servants.

The decoration is circular in design, with a geometrical pattern superimposed on the circle. The diameter of the circular portion is 4.4 cm and the thickness about .6 mm. On the obverse, there is a lotus flower embossed on the circular space. The word "Padma" is embossed in Hindi above and the word "Vibhushan" below the lotus flower. On the reverse are the State emblem and the motto in Hindi. It is of toned bronze. The inscription "Padma Vibhushan" on the obverse, the geometrical pattern on either side and the border around periphery are in burnished bronze. All embossing on either side of decoration is in white gold.

Padma Bhushan : The award is given for distinguished service of a high order in any field, including service rendered by government servants.

It has the same design as the "Padma Vibhushan". On its obverse the word "Padma" appears above and the word "Bhushan" below the lotus flower. The inscription "Padma Bhushan" on the obverse, the geometrical pattern on either side and the border around periphery are in burnished

bronze. All embossing either side of the decoration is in standard gold.

Padma Shri : The award is given for distinguished service in any field including service rendered by government servants.

The name of the decoration is embossed in Hindi with the word "Padma" above and the word "Shri" below the lotus flower on the obverse. The inscription "Padma Shri" on the obverse, the geometrical pattern on either side and the border around the periphery are in burnished bronze. All embossing on either side of the decoration is in stainless steel.

Padma Awards : President, Mr. K.R. Narayanan conferred the *Padma Vibhushan*, *Padma Bhushan* and *Padma Shri* awards on various personalities on March 23, 1999. Prominent among the awardees who were honoured with the *Padma Vibhushan* included melody queen Lata Mangeshkar and eminent vocalist Bhimsen Joshi, Mr. Satish Gujral, Mr. Justice Hans Raj Khanna (Retd.) and Dr. Verghese Kurien, architect of India's White Revolution 'Operation Flood'. Mr. Anil Kakodkar, Director of Bhabha Atomic Research Centre and Chief Adviser (technology) in the Defence Research and Development Organisation, Mr. Krishnamurthy Santhanam were among the 13 recipients of *Padma Bhushan*. India's Master batsman Sachin Tendulkar, actress Sulochana and poet Javed Akhtar and weightlifter Karnam Malleswari were prominent among the recipients of *Padma Shri*.

GALLANTRY AWARDS

Param Vir Chakra : The highest decoration for valour is the Param Vir Chakra which is awarded for the most conspicuous bravery or some daring pre-eminent act of valour or self-sacrifice in the presence of the enemy, whether on land, at sea or in the air.

The decoration is made of bronze and is circular in shape. It has, on the obverse, four replicas of "Indra's Vajra" embossed round the state emblem in the centre. On the reverse the words "Param Vir Chakra" are embossed both in Hindi and English with two lotus flowers in the middle.

The decoration is worn on the left breast with a plain purple coloured riband about 3.2 cm in width.

Mahavir Chakra : The Mahavir Chakra is the second highest decoration and is awarded for acts of conspicuous gallantry in the presence of enemy, whether on land, at sea or in the air.

It is made of standard silver and is circular in shape. Embossed on the obverse is a five pointed heraldic star with domed centre-piece bearing the

gilded state emblem in the centre. The words "Mahavir Chakra" are embossed both in Hindi and English on the reverse with two lotus flowers in the middle.

The decoration is worn on the left breast with a half-white and half-orange riband about 3.2 cm in width, the orange being near the left shoulder.

Vir Chakra : The Vir Chakra is third in the order of awards given for act of gallantry in the presence of the enemy, whether on land, at sea or in the air.

The decoration is made of standard silver and is circular in shape. Embossed on the obverse is a five pointed heraldic star which has an Ashoka Chakra in the centre. Within this chakra is a domed centre-piece bearing gilded state emblem. On the reverse, words "Vir Chakra" are embossed, both in Hindi and English, with two lotus flowers in the middle.

The Chakra is worn on the left breast with a half-blue and half-orange riband, about 3.2 cm in width, the orange being nearer the left shoulder.

Ashoka Chakra : The medal is awarded for the most conspicuous bravery or some daring or prominent act of valour or self-sacrifice on land, at sea or in the air.

The Chakra is made of gilt gold and is circular in shape. Embossed on the obverse is a replica of Ashoka Chakra surrounded by a lotus wreath. Along the edge is pattern of lotus leaves, flowers and buds. On the reverse, the words "Ashoka Chakra" are embossed both in Hindi and English, with lotus flowers in the intervening space.

The Chakra is worn on the left breast with a green silk riband, about 3.2 cm in width and divided into two equal segments by an orange vertical line.

Kirti Chakra : The decoration is awarded for conspicuous gallantry. It is made of standard silver and is circular in shape. The obverse and the reverse are exactly the same as in the Ashoka Chakra.

The Chakra is worn on the left breast with a green silk riband, about 3.2 cm in width and divided into equal segments by two orange vertical lines.

Shaurya Chakra : The decoration is awarded for an act of gallantry. It is exactly like the Ashoka Chakra, except that it is made of bronze.

The Chakra is worn on the left breast with a green silk riband, about 3.2 cm in width and divided into four equal segments by three orange vertical lines.

Param Vishisht Seva Medal, Ati Vishisht Seva Medal, Vishisht Seva Medal : The Vishisht Seva (Distinguished Service) Medals are awarded to personnel of all the three services in recognition of

distinguished service of the "most exceptional", "exceptional" and "high" order respectively. Param Vishisht Seva Medal is made of gold, Ati Vishisht Seva Medal of standard silver and Vishisht Seva Medal of bronze, all circular in shape and 3.5 cm in diameter. Each medal has on its obverse five pointed stars and on its reverse the Lion Capital. Its ribbon is golden with one dark-blue stripe down the centre for Param Vishisht Seva Medal, two dark-blue stripes dividing it into three equal parts for Ati Vishisht Seva Medal and three dark-blue stripes dividing it into four equal parts for Vishisht Seva Medal.

Jeevan Raksha Awards: The medals are awarded for meritorious acts or a series of acts of a humane nature displayed in saving a person from drowning, fire and rescue operations in mines, etc.

Sarvottam Jeevan Raksha Padak: The medal is awarded for conspicuous courage under circumstances of a very great danger to the life of the rescuer.

Uttam Jeevan Raksha Padak: The medal is awarded for courage and a promptitude under circumstances of a great danger to the life of rescuer.

Jeevan Raksha Padak: The medal is awarded for courage and promptitude in saving life under circumstances of grave bodily injury to the rescuer.

The above awards were formerly known as Jeevan Raksha Padak, Class I, Class II and Class III.

Two new Medals have been introduced in 1988. These are the Uttam Seva Medal and Yudh Seva Medal.

OTHER NATIONAL AWARDS

Aditya Vikram Birla Kalashikhar Puraskar : Sarangi player, Pandit Ram Narayan was chosen on November 7, 1999 for Aditya Vikram Birla Kalashikhar Puraskar in recognition of his achievement in Hindustani classical music. The award instituted by the Sangit Kala Kendra, carries Rs. 1.5 lakh in cash, a scroll of honour and a memento.

Arjuna Awards : Cricketers Rahul Dravid and Nayan Mongia, boxer Dingko Singh, athlete Paramjit Singh, woman rifle shooter Roopa Unni Krishnan, former national hockey captain Surjeet Singh (posthumously) and soccer star Barchung Bhutia were among the 30 sportspersons who were presented the 1998 Arjuna Awards on September 1, 1999. It is the highest honour in the field of sports. It was instituted in 1961. The award

carries a bronze statuette of the epic archer, Arjuna, a scroll and Rs. 50,000.

Aryabhata Award: Prof. Satish Dhawan and Prof. U.R. Rao, former Chairman of the ISRO, were presented the prestigious 1994 Aryabhata awards in Bangalore on April 23, 1995, while the 1992 award was given to Prof. Dhawan for his contribution to the promotion of astronautics in the country. Prof. Rao was conferred the 1993 award. The award, instituted by the Astronautics Society of India, a professional body committed to the development of astronautics in the country, carries a cash prize of Rs. 50,000.

B.C. Roy National Award : Noted ENT surgeon, Maj. Dr. R.R. Thukral was named for coveted Dr. B.C. Roy National Award on May 10, 1999 instituted by the Medical Council of India. Dr. Thukral is Honorary Surgeon to the President of India.

B.C. Roy Awards 1997 : President K.R. Narayanan conferred Dr. B.C. Roy Awards for 1997 on the following :

Eminent Medicalmen : Dr. P. Venugopal, AIIMS, New Delhi and Dr. G.B. Parulkar, Cardiac Surgeon, Mumbai.

Eminent Medical Teachers : Dr. Tamal Kumar Biswas, Dr. Sharad Dattatraya Bapat, Dr. Satya Deo Purohit, Dr. Davender D. Patel and Dr. Shashanka Mohan Bose.

Best Talents in Encouraging Development of Specialities in Different Branches of Medicine : Dr. Maligali Ramakrishna Glinath, Chairman of Cardio-Vascular Surgery, Apollo Hospitals, Chennai, Dr. Bhimanakunte Krishna Rao, Dr. Abhay Kumar Vasavada, Dr. Ajit G. Phadke and Dr. S.N. Bhagwati.

Socio-Medical Relief : Dr. N. Sethuraman, founder-chairman of Meenakshi Mission Hospital and Research Centre, Madurai, Dr. V.C. Velayudhan Pillai and Dr. R.P. Aggarwal.

Original Research Work in The Field of Medical And Allied Sciences : Prof. N.C. Misra, Dr. Dhanraj Singh and Dr. Jyotirmay Biswas.

B.D. Goenka Award : Mr. H.K. Dua, former Editor of *The Indian Express*, *The Hindustan Times* and *The Times of India* was on May 6, 1999 chosen for the coveted B.D. Goenka Award for excellence in journalism for 1998 in recognition of stand he took in defence of the editor's freedom in a newspaper.

Bharatiya Jnanpith Award : Prime Minister, Mr. Atal Behari Vajpayee on March 27, 1999 presented the Bharatiya Jnanpith Award for 1998 to celebrated Kannada writer-actor Gish Karnad, who became the first playwright to receive the honour. The award was given to Mr. Kamad, the

34th Jnanpith Award recipient, in recognition of his outstanding contribution to Indian literature during 1978-97. The award carries a bronze Vagdevi-Saraswati statue, citation and a shawl besides a cheque of Rs. 5 lakh.

The following are the other recipients of the Jnanpith Award from 1980 onwards :

1. S.K. Pottekkatt (1980)—*Oru Desathinte Katha* (Malayalam)
2. Mrs. Amrita Pritam (1981)—Punjabi
3. Mahadevi Varma (1982)—*Yama* (Hindi)
4. Masti Venkatesh Iyenger (1983)—Kannada
5. Thakazhi Sivasankara Pillai (1984)—Malayalam
6. Pannalal Patel (1985)—Gujarati
7. Satchidanand Rautroy 'Sachi' (1986)—Oriya
8. V.V. Shirwadkar (1987)—Marathi
9. Dr. C. Narayana Reddy (1988)—Telugu
10. Ms Quarratul-ain-Halder (1989)—Urdu
11. Prof. Vinayak Krishna Gokak (1990)—Kannada
12. Subhas Mukhopadhyay (1991)—Bengali
13. Naresh Mehta (1992)—Hindi
14. Sitakant Mohapatra (1993)—Oriya
15. Prof. U.R. Ananika Murthy (1994)—Kannada
16. Mr. M.T. Vasudevan Nair (1995)—Malayalam
17. Mrs. Mahasweta Devi (1996)—Bengali
18. Ali Sardar Jafri (1997)—Urdu

Bhaskara Award : Dr. George Joseph, former Director of the Ahmedabad-based Space Application Centre of the Indian Space Research Organisation, was awarded the first Bhaskara award instituted by Indian Society for Remote Sensing (ISRS) on January 19, 1999. The award, instituted to recognise the outstanding work done by a scientist in the field of remote sensing has

started from this year and will be given annually. The award given to Dr. Joseph in recognition of his pioneering work in developing sensors for Indian Remote Sensing (IRS) satellites, carries a citation and a cash prize of Rs 50,000.

Bihari Puruskar : Dr. Vishwambhar Nath Upadhyaya, a former Vice-Chancellor of Kanpur University, was awarded the Bihari Puraskar in recognition of his novel *Vishwabahu Parashuram*. The Puraskar awarded by the K.K. Birla Foundation for an outstanding work in Hindi by a Rajasthani writer carries Rs. 75,000 as award money.

Mr. Rituraj was the recipient of 1997 award for his poetic work in Hindi *Surat Nirat*.

Birla Awards for Sports: Badminton champion Gopi Chand, Weightlifter Kunjarani and Mountaineer Santosh Yadav were selected for 1996 K.K. Birla Foundation Awards for Sports for their outstanding

contribution in the national and international fields while Indian cricket captain Sachin Tendulkar and veteran handicapped athlete Ms Malathi K. Holla were the recipients of 1995 awards. Olympian woman athlete Shiny Wilson was nominated for a special award. Past award winners are Kapil Dev, Ms Bhuvaneshwari Kumari, Geet Sethi, Viswanathan Anand, Ramesh Krishnan, Bahadur Prasad, Ms Karnam Malleswari and Jaspal Rana.

Instituted by the K.K. Birla Foundation in 1991 to accord recognition to outstanding performances by sportspersons, the awards carry a prize of Rs. 75,000 each.

Borlaug Award: Three scientists Dr. P. Pushpangaden, Director Kerala-based Tropical Botanic Gardens and Research Institute, Dr. V. Arunachalam, former Head of New Delhi-based Indian Agricultural Research Institute's genetics division and Mr. Darshan Shankar of Bangalore-based Foundation for Revitalisation of Local Health Traditions were selected for 1997-98 Borlaug Award while former Union Agriculture Minister, Mr. C. Subramaniam, received the award for 1995-96 from the Nobel laureate, Dr. Norman Borlaug, in recognition of his contribution for ushering in Green Revolution in the country.

C.K. Nayudu Award : Mr. Pahalaji Ratanji 'Polly' Umrigar, India's cricketing veteran of the 50s, bagged the C.K. Nayudu Award on July 26, 1999 for his contribution to the Indian cricket. The award carries a citation, a trophy and a cash prize of Rs. 2 lakh. Mr. Umrigar is the fifth recipient of the award, after Mr. Lala Amarnath, Mr. Mushtaq Ali, Mr. Vijay Hazare and K.N. Prabhu.

Chamell Devi Jain Awards : The Media Foundation presented the Chamell Devi Jain Awards to outstanding women journalists on March 31, 1999. Ms. Hemal Vyarwala, the Grand Old Lady of Indian Photo Journalism was awarded for her "pioneering role in promoting photo journalism in India". Ms. Pamela Philipose, Senior Editor of the *Indian Express* and Ms. Vasavi an activist and freelance writer for *Jansatta* were other awardees.

CSIR Technology Awards : The CSIR Technology Awards 1999 were presented to five laboratories at the 57th Foundation Day of the CSIR in New Delhi on September 26, 1999. The carbon group of National Physical Laboratory (NPL) bagged the award for the development of advanced carbon products having industrial, strategic and social importance. In the engineering technology, two teams—from the Central Road Research Institute (CRRI), Delhi and the Structural Engineering

Research Centre (SERC), Chennai jointly won the award. (The CRRI has developed innovative ways to utilise fly-ash for the road and embankment construction while the SERC was awarded for the development of advanced computational methodologies and modelling techniques, which are recognised nationally and internationally.) The award for the biology sciences and technology was bagged by a team from the Central Institute of Medicinal and Aromatic Plant, Lucknow for the development of an early maturing variety of mint. In the chemical technology, a team of researchers from the Indian Institute of Petroleum, Dehradun and the Engineers India Ltd, Delhi was awarded for developing propane deasphalting of petroleum residues which is being used by several refineries.

Dadabhai Naoroji Millennium Awards : Field Marshal Sam Manekshaw and Corporation Bank Chairman Mr. R. S. Hugar were among the prominent persons who were presented the Dadabhai Naoroji Millennium Awards on June 30, 1999. The award, instituted by the Dadabhai Naoroji Parliamentary Centenary Committee were given for their services to the nation and society.

Dada Saheb Phalke Award : Noted film-maker B.R. Chopra whose hit films including *Kanoon* and *Iltefaq* and tele-serial *Mahabharat* became the milestones in Indian Cinema and TV, was chosen for Dada Saheb Phalke Award 1998 on October 21, 1999 in recognition of his outstanding contribution to film-making. The award which is the highest official recognition for film personalities, comprises a Swarna Kamal, a shawl and a cash prize which has been raised this time from Rs. 1 lakh to Rs. 2 lakh.

Introduced in 1971, the Dada Saheb Phalke award was first given to actress Devika Rani. Other winners from 1989 onwards are : Kavi Pradeep (1997); Sivaji Ganesan (1996); Dr. Raj Kumar (1995); Dilip Kumar (1994); Majrooh Sultanpuri (1993); Dr. Bhupen Hazarika (1992); Bhalchandra Govind Pendharkar (1991); Akkineni Nageshwar Rao (1990); Lata Mangeshkar (1989).

Dayawati Modi Award : Noted Ghazal singer Jagjit Singh was selected for Dayawati Modi Award on November 1, 1999. The award is given by Dayawati Modi Foundation for Art, Culture and Education.

The award, which carries a cash prize of Rs. 2,51,000, a memento, a citation, a shawl and a coconut, was presented to the poet for his contribution to Hindi poetry.

Mr. Ravi Paranjpe, an artist, illustrator and architectural delineator was presented the third Dayawati Modi Award.

The second Dayawati Modi Award for art, culture and education for 1995 was conferred on Mother Teresa.

First Dayawati Modi Vishwa Sanskrit Samman Award was presented to Prof. Satya Vrat Shastri on November 7, 1995, the birth anniversary of Dayawati Modi.

Dhanvantri Award : Dr. S.S. Badrinath, renowned ophthalmic surgeon and founder of the Shankar Netralaya, Chennai was conferred the Dhanvantri Award by Maharashtra Governor Dr. P.C. Alexander on October 31, 1999. The award carries a citation, a gold medal and a bronze statue of Dhanvantri, the god of healing.

Dronacharya Award (1998) : Bahadur Singh and Hargobind Singh (Athletics), Gurbax Singh Sandhu (Boxing) received the Dronacharya Award on September 1, 1999. The award, instituted in 1985, is given to eminent coaches who have successfully trained international sportspersons and teams. It carries a statuette of legendary archer Guru Dronacharya, a scroll and Rs. 2,50,000 in cash.

Femina-Miss India, 1999 : Twenty-year-old girl from Delhi, Ms. Gul Panag was crowned Femina India- Universe at the 1999 Miss India beauty extravaganza in Pune on January 16, 1999. Mumbai girls Ms. Yukta Mookhey and Ms. Shivangi Parikh were crowned Miss India-World and Miss India Asia-Pacific respectively.

Filmfare Awards : 44th Filmfare Awards were presented on February 21, 1999. The blockbuster *Kuch Kuch Hota Hai* bagged most of the top popular awards. It won the best film, best actress (Kajol) best actor (Shahrukh Khan) and best director (Karan Johar) awards. Rani Mukherjee also won her first Filmfare award for the best actress in a supporting role for this film, while Salman Khan clinched the award for best actor in a supporting role for the same film. Satya won three critics awards—best film (Rajgopal Verma), best actor (Manoj Bajpayee) and best actress (Shefali Chhaya). In the music section, *Chaiya Chaiya* song of *Dil Se* bagged awards for best lyrics (Gulzar), best music (A.R. Rahman), best male playback singer (Sukhwinder Singh) and best choreography (Farah Khan). Newcomer Jaswinder Narula won the award for best female playback singer for *Pyar To Hona Hi Tha*. Fardeen Khan and Preity Zinta were adjudged the best debutants. Shekhar Kapur, whose *Elizabeth* has won international accolades, was presented a Special Award.

G.D. Birla Award: Prof. R.N. Dandekar National Research Professor of the Bhandarkar Oriental

Research Institute, Pune, Pandurang Shastri Athavale, Pioneer of Swadeshi movement and Dr. Rajammal Devadas, a campaigner for functional literacy and primary health care in Tamil Nadu have been selected for 1998 G.D. Birla Awards while the founder of the SOS villages, Mr. J.N. Kaul, prominent Russian indologist, Mr. R.B. Rybakov, and Kaira District Cooperative Milk Union in Gujarat were the recipients of 1996 awards.

Each award carries a cash prize of Rs.1 lakh and citation. These have been instituted by the Birla Academy of Arts and Culture to commemorate the humanistic and cultural values cherished by Mr. G.D. Birla.

Gandhi Peace Prize: Baba Amte, the Gandhian humanist and a noted social worker, has been chosen for the Gandhi Peace Prize for the year 1999, in recognition of his exemplary work for treatment and rehabilitation of leprosy patients and his concept of the *Shramik Vidyapeeth*.

The Prize for 1998 was conferred on the Ramakrishna Mission in recognition of its "selfless service to the humanity which reflected the Gandhian view." The award carries a cash prize of Rs. 1 crore, a citation and a plaque.

The other recipients of the award were Mr. Gerhard Fischer of Germany (1997), Mr. A.T. Ariyaratne, founder President of the Sarvodaya Movement in Sri Lanka (1996) and Mr. Julius Nyerere, the late former President of Tanzania (1995).

Gandhi Sahitya Award : Mr. Omesh Saigat has been selected for the first Gandhi Sahitya Award for *Never Gandhi Not Again* a book of poems in English.

Goenka Awards : D.N. Bezbaruah, Editor, *The* of Guwahati, was conferred for B.D.

Award for Excellence in Journalism for 1997 for his fearlessness in defending the unity of India and his consistent condemnation of secessionist demands while Editor of *Malayala Manorama* K.M. Mathew and Editor of *Economic and Political Weekly* Krishna Raj, were the recipients of the 1996 award.

Great Patriot of India Award : The Election Commissioner, Mr. G.V.G. Krishnamurthy was presented (September 26, 1999) the Great Patriot of India Award by the All India Conference of intellectuals in recognition of the distinguished services rendered by him to the nation.

Gujar Mal Modi Award : Prof. U.R. Rao, space scientist and former chairman of the Indian Space Research Organisation (ISRO) was conferred the Gujar Mal Modi Award 1999 on August 9, 1999.

Professor P.N. Tandon, a neuro-surgeon at the All India Institute of Medical Sciences was conferred the 1998 Award while Dr. A.P.J. Abdul Kalam, a distinguished scientist and Scientific Adviser to the Defence Minister, was on August 9, 1996 conferred the Award for outstanding contribution to innovative science.

In 1994 this award was given to Mr. M.G.K. Menon and Mr. A.K. Sharma and in 1995 this award was given to Prof. C.S. Seshadri.

The award carries Rs. 1.01 lakh as cash prize, apart from a silver shield and scroll and was instituted in 1988. It is given to the best scientist of the year who has made an outstanding contribution to research resulting in new innovative technology.

Guru Kelucharan Mohapatra Awards : Four personalities belonging to the world of performing arts were selected for the Guru Kelucharan Mohapatra Awards for 1999. They included celebrated exponent of the Odissi dance-form, Guru Pankaj Charan Das, noted stage artistes Durlabha Chandra Singh and Manima Devi and renowned exponent of Odissi style of music, Pandit Kashinath Pujapanda, the Director of Srijan, an academy on Odissi dance.

Hafiz Ali Khan Awards: Pakistani qawwali singer Nusrat Fateh Ali Khan, santoor maestro Shiv Kumar Sharma and Hindustani vocalist Shobha Guru were conferred the 1996 Hafiz Ali Khan awards for excellence in their fields.

The Ustad Hafiz Ali Khan Memorial Society instituted the awards in 1985 to recognise the invaluable contribution of artistes in different disciplines of classical music. So far, 33 great masters of classical music have been honoured.

Indira Gandhi Award for National Integration : The former President, Dr. Shankar Dayal Sharma, was selected for Indira Gandhi Award for National Integration for the year 1998 on October 5, 1999. The award carries a citation and a cash component of Rs. 1.51 lakh.

Indira Priyadarshini Vrikshamitra Award : Mr. Ramesh Sharma, Superintendent of Railway Police was selected for Indira Priyadarshini Vrikshamitra Award for 1999. The award carries a cash component of Rs. 50,000 and a plaque.

Iqbal Samman : Well-known authors Ibrahim Yusuf and Joginder Pal were chosen for Iqbal Samman for creative writing in Urdu literature—for the year 1998-99 and 1999-2000 respectively. Instituted by the Madhya Pradesh Government, the Samman carries a cash prize of Rs. 1 lakh and a scroll of honour.

J.R.D. Tata Corporate Leadership Award : Dr. R. Mashelkar, Director-General of the Council for Scientific and Industrial Research (CSIR), was awarded the JRD Tata Corporate Leadership Award on February 21, 1999 in recognition of the role which technology is slated to play in the approaching century. The award carries a cash prize of Rs. 2 lakh, a rolling trophy and a citation. This is the first time that the award, instituted by All India Management Association (AIMA) with Tatachem Golden Jubilee Foundation, has been awarded to a scientist.

K.K. Birla Foundation Award : Anil Kumble was presented K.K. Birla Foundation Award on February 10, 1999 in recognition of his feat in India-Pakistan Pepsi Test Challenge Cup Series match in New Delhi on February 7, 1999 when he became the second bowler in Test history to claim ten wickets in an innings. The award carried a memento and Rs. 1.50 lakh.

K.N. Modi Award: Dr. Rama Gowda, Chairman of All India Council for Technical Education (AICTE), was presented the Dr. Kedar Nath Modi National award on March 31, 1997. Prof. S.K. Khanna was the first recipient of the award for excellence in education management and information technology.

The annual award comprises cash worth Rs.1.51 lakh, a memento and citation.

Kabir Award: Mrs. Santana Deb Barina of Tripura was conferred the award for 1998 for her role in preventing violence during ethnic riots in 1997 while well-known Malayalam poet, Dr. K. Ayyappa Panicker, and noted painter, Mrs. Mahasundari Devi were the recipients of the Madhya Pradesh Government's National Kabir Awards for 1996. The award carries a cash prize of Rs. 1.5 lakh and a plaque.

Kalidas Samman : Renowned flutist Pandit Hariprasad Chaurasia, noted theatre personality Pandit Satyadav Dube, dance exponent K.P. Kitappa and visual arts exponent Francis Newton Souza were on October 28, 1999 selected for Kalidas Samman for 1999-2000. The Samman instituted by the Madhya Pradesh Government carries a cash prize of Rs. 1 lakh and a plaque. The Samman is given to eminent personalities in the fields of classical music, classical dance, visual arts and theatre for their outstanding achievements.

Karkashri Award: Mr. K.C. Kuriakose was selected for 1998 award instituted by Malayala Manorama Group, for his achievement in the field of farming.

Kishore Kumar Award : Noted Hindi filmmaker and lyricist Gulzar was selected for Kishore Kumar

Award for 1999-2000 on October 22, 1999 in recognition of his dedicated work in the field of script and song-writing. The award instituted by the Culture Department of the Madhya Pradesh Government, carries a citation and a cash prize of Rs. 1 lakh.

L.K. Bakshi Memorial Award : Dr. Bindeshwar Pathak, founder of Sulabh International, was presented the L.K. Bakshi Memorial Award 1999, in recognition of his role in promoting tourism and travel facilities.

Lata Mangeshkar Award : Noted Playback Singer Asha Bhonsle was on September 28, 1999 selected for Lata Mangeshkar Award for 1998-99. The award given by the Maharashtra Government carries Rs. 1 lakh in cash and a citation.

Lata Mangeshkar Samman : Renowned playback singer S.P. Balasubramanyam, was on November 1, 1999 selected for the Lata Mangeshkar Samman given by the Madhya Pradesh Government. The award carries Rs. 1 lakh in cash and a citation.

Lifetime Achievement Award : The All-India Association of Industries conferred the Lifetime Achievement Award on Mr. Nani A. Palkhivala in Mumbai on April 15, 1999. The award was presented in recognition of his well-known address over three decades on the Union Budget as well as his contribution in the field of law, Constitution and selfless service to public life.

M.P. Birla Memorial Award : Prof. S.M. Chitre, internationally renowned solar physicist and a senior professor in the Tata Institute of Fundamental Research, Mumbai was awarded the M.P. Birla Memorial Award 1999. The award was presented to him for his exceptional achievements in the fields of Astronomy, Astrophysics, Space Science and allied disciplines at a function organised by the Birla Institute of Astronomy and Planetarium Sciences, in Calcutta on July 4, 1999. The award carries a citation and Rs. 100,000 in cash. Prof. Chitre is the fourth recipient of the award, since it was instituted in 1993.

Man of the Letters Award : Former Home Secretary, Mr. B.P. Singh, a distinguished Civil Servant and scholar, was selected on October 25, 1999 for the first Man of the Letters Award for bringing out some of the complex features of Indian culture through his writing. Instituted by the Sulabh International Social Service Organisation, the award carries a golden plaque, a gold pendant, a citation and a cash prize of Rs. 5 lakh. Mr. Singh is presently Executive Director of World Bank for South Asia.

Manubhai Mehta Award : Prof. Arvind Bhatnagar, former director of the Nehru Planetarium Mumbai and the Udaipur Solar Observatory was selected for the Manubhai Mehta Award for 1998-99 for his contribution to advanced astronomy and popularisation of science in the country.

Mahatma Gandhi Award: The President, Dr. Shankar Dayal Sharma, on February 27, 1997 presented the prestigious Mahatma Gandhi award to Lok Bharati of Bhavnagar in Gujarat, for its constructive activities in social service.

Instituted by the Madhya Pradesh Government, the award carries a purse of Rs. 5 lakh. Earlier, this award was given to the Kasturba National Memorial Trust of Indore.

Mahavir Awards : Union Minister of State for Social Justice and Empowerment, Ms. Maneka Gandhi was presented the coveted Mahavir Award for 1999 on April 13, 1999 for promoting non-violence and vegetarianism. The other two recipients of the award for 1999 were Dr. G. Venkataswamy for work in the field of education and medicine, and Mr. B.P. Jain for community and social service. The award which carries a citation, a memento and a cash prize of Rs. 5 lakhs was instituted by Bhagwan Mahavir Foundation for excellence in human endeavour.

Mastil Award : Well-known litterateur, Dr. A.N. Moorthy Rao was selected for the coveted Mastil Award on April 15, 1999. Dr. Rao was chosen in recognition of his contributions to Kannada literature through essays, travelogues, autobiographies, criticisms, translations and rational writings.

Maulana Azad Communal Harmony Awards: Former MP, Sunil Dutt, Dalit leader, R.S. Gavai, social worker, Vipra Kadvi, journalist, Vishwanath and Dr. L.H. Hiranandani, a legendary in the world of medicine, were chosen for award.

Moortidevi Award: The 13th Moortidevi Award 1995 was presented to Hindi writer Nirmal Verma, on May 22, 1997 by the Dalai Lama in New Delhi, for his collection of essays, *Bharat Aur Europe : Pratishruti Ke Kshetra*.

Murli M. Chigani Award : Space Commission Chairman and Secretary, Department of Space, Dr. K. Kasturirangan was presented the first Murli M. Chigani Award for excellence in applied physics on September 24, 1999. The award was given in recognition of his outstanding and multi-faceted contribution to the Indian space programme in the last 30 years that saw the country attaining world class stature in sophisticated high technology area. Instituted by the Indian Physics Association (IPA)

to be given biennially, the award carries a cash prize of Rs. 1 lakh, a citation and a gold medal.

National Award for Child Welfare, 1998 : SOS Children Village, Aluva in Kerala was one of the five recipients of the National Award for Child Welfare 1998. Danyi-Polo Mission School for Hearing Impaired, Andhra Pradesh, the Seva Niketan Dairy Firm, Andaman and Nicobar Islands, St. Mary's Convent, Shillong, and the Calcutta Muslim Orphanage are the other recipients. The award carries two cash prizes of Rs. 2 lakh each and a citation.

National Export Award : The Bharat Heavy Electricals Limited (BHEL) won the National Export Award in recognition of its outstanding performance during 1997-98. The award was instituted by the Ministry of Commerce.

National Film Awards : The following are the recipients of the National Film Awards announced on July 16, 1999. Vinay Shukla's *Godmother* bagged six awards including Best Actress—Shabana Azmi; Best Lyric *Mati Re Mati Re*—Javed Akhtar; Best Male Playback Singer—Sanjeev Abhyankar for *Suno re Bhaiya*; Best Editing—Renu Saluja; Best Music—Vishal Bhardwaj and the Best Feature Film in Hindi in the language category. While Ajay Devgun was named the Best Actor for his performance in Mahesh Bhatt-directed *Zakhm*. (He shared the award with Malayalam actor Mammootty for his performance in English film *Dr. Babasaheb Ambedkar* directed by Jabbar Patel.) Aika Yagnik won the best Female Playback Singer Award for the film *Kuch Kuch Hota Hai*. Shyam Benegal's latest film *Samar* bagged two awards including the Best Feature Film as also for the Best Screenplay for Ashok Mitra.

National Human Rights Award : Ms. Medha Patkar was selected for the M.A. Thomas National Human Rights Award for 1999 on June 26, 1999 in recognition of her work in fighting for the rights of those displaced due to the construction of the Sardar Sarovar Project. The award carries a cash prize of Rs. 1 lakh and citation.

National Science Awards, 1999 : The National Council of Science and Technology conferred 1999 National Science Awards on February 28, 1999. Mr. M.A. Sethu Rao of Bangalore was presented the award comprising Rs. 1 lakh in recognition of his effort to promote science by way of radio talks and production of popular science films. Dr. Bijoy Krishna Dev Sharma of Shillong was presented the award of Rs. 50,000 for his efforts in popularising science through a number of books, articles and radio talks on science topics in

ssamese and English. Bhubaneswar based blunary organisation "Surujanika" was given the ward of Rs. 50,000 for its effort in popularising science among children through kits and toys and low cost publications.

National Tourism Awards : The Ministry of Railways bagged the award for the 144-year-old "Fairy Queen" certified by the *Guinness Book of Records* as being the oldest steam engine still running on main line.

Nayudamma Award : The Nayudamma Award for 1999, instituted by Nayudamma Centre for Development Alternatives, Nellore, was conferred on Prof. P. Ramachandra Rao, Director, National Metallurgical Laboratory, Jamshedpur at a function held in Nellore on May 15, 1999. The award carries a silver plaque and a citation.

Neerja Bhanot Pan Am Trust Award : Two women who fought injustice at home and workplace, were chosen for the Neerja Bhanot Pan Am Trust Award. Ms. V. Gowramma (1998) of Bangalore and Ms. Chandra G. Kanjilal of Andhra Pradesh (1999) were chosen for the award carrying a prize of Rs. 1,50,000 each, a citation and a trophy.

Nehru Fellowships : Noted freelance journalist, Palagummi Sainth and Jairam Ramesh, distinguished columnist were selected for 1998 Jawaharlal Nehru Fellowship. Earlier, recipients are : Dr. Dinanath Pathy, a research scholar in creative arts, and Prof. Neera Chandhoke, an accomplished political scientist.

Om Prakash Bhasin Awards : Prime Minister, Mr. Atal Behari Vajpayee, on June 21, 1999 presented the Om Prakash Bhasin Awards for Science and Technology to five scientists in recognition of their contribution to the field of science and technology. The recipients are Dr. Seetharam in the field of agriculture and allied sciences, Dr. (Mrs.) Manju Sharma (bio-technology), Dr. Sankar Kumar Pal (electronics and information technology), Dr. P. Ramchandra Rao (engineering including energy and aerospace) and Dr. (Ms.) M. Gouri Devi (health and medical sciences).

Parliamentarian (Best) Award : The CPI(M) leader in the Lok Sabha, Mr. Somnath Chatterjee was given the Govind Ballabh Pant Best Parliamentarian Award for 1996. He is the fourth leader to win this distinction—the first was Mr. Indrajit Gupta, leader of the Communist Party of India, the second was Mr. Atal Behari Vajpayee, formerly Leader of BJP Party in Lok Sabha & presently PM and the third was Mr. Chandra Shekhar, the former PM. The award carries a prize of Rs. 1 lakh.

Person of Pride Award : Dr. A.P.J. Abdul Kalam was selected for 1998 award by Mumbai-based Chaturang Pralishan. The award is conferred on "Personalities whose achievements during the year brought pride to every Indian".

Prani Mitra Awards : The Union Minister of State for Social Justice and Empowerment, Mrs. Maneka Gandhi is among the six recipients of Prani Mitra Awards for 1999, given by the Animal Welfare Board of India. Mrs. Gandhi was selected for the award in recognition of her significant contribution towards animal welfare and protection. The other recipients of the awards are Mr. Dashrathbhai Munilal Thaker, Secretary of the Mumbai Humanitarian League, late Capt. V. Sundaram who was working with the Blue Cross India, Chennai, and noted animal lovers Mrs. Kaya Gupta (Calcutta), Mrs. Margyaben Mohanlal Khandar (Gujarat) and Mr. Tilak Raj (Amritsar).

Rajiv Gandhi Khel Ratna Award : Asian Games gold medalist middle distance queen Jyotirmoyee Sikdar was presented the 1998-99 Rajiv Gandhi Khel Ratna Award on September 1, 1999. The award instituted by the Government is given to sportspersons for the most spectacular performance. It consists of a medal, a scroll of honour and a cash prize of Rs. 3 lakh. The earlier recipients are Viswanathan Anand in Chess (1991-92), Geet Selhi in Billiards (1992-93), Cdr. Homi D. Motiwala and Lt. Cdr. P.K. Garg in Yachting (1993-94), Kamam Malleswari (1994-95) and Kunjarani Devi in Weightlifting (1995-96), Leander Paes in Tennis (1996-97) and Sachin Tendulkar in Cricket (1997-98).

Rajiv Gandhi Memorial National Awards : Andhra Pradesh Sports and Youth Affairs Minister, Dr. Geeta Reddy, Parliament member, Bhubaneswar Kalita, and an aviation expert, Sabu V. Chacko, were among the seven prominent personalities selected for the Rajiv Gandhi Memorial National Awards for 1994.

Instituted by the All India Ferozo Gandhi Memorial Society, these awards are given to prominent personalities for their outstanding achievements in various walks of life.

Dr. Geeta Reddy was selected for her excellent performance in uplifting weaker sections of the society.

Mr. Kalita was selected for his performance in the Rajya Sabha and as Chairman, Subordinate Legislation Committee.

Mr. Sabu V. Chacko, Regional Manager, East West Airlines, was selected for his excellent

performance in aviation management and administration.

Other award winners were—Mr. Ramesh Chennithala, MP, for his performance in the Lok Sabha and his efforts in mobilising youth activities, Dr. Madan G. Gandhi, head of the department of political science, M.D. University, Rohtak for creating political awareness among the weaker sections, Mr. V.N. Rai, DIG, Haryana for efficiency in administration and Mr. P.M. Rawther, former chief reporter of *Chandrika daily*, for his contribution to journalism.

Rajiv Gandhi National Sadbhavana Award : Mr. Jagan Nath Kaul popularly called 'Papaji' of the SOS Villages of India was presented the Rajiv Gandhi National Sadbhavana Award on August 30, 1999 in recognition of his 35 years of service in promoting unity and brotherhood among the younger generation.

Rajiv Gandhi Excellence Award: Mr. P.K.S. Madhavan, Chairman of the Action for Wellare and Awakening in Rural Environment (AWARE) was conferred with the prestigious Rajiv Gandhi Excellence Award for 1994 on August 19, 1995 for his untiring efforts for the upliftment of the rural people.

Sahitya Akademi Awards for 1997 : 21 persons including Nabarun Bhattacharya (Bengali), Anand P. Sachidanandan (Malayalam), Madhukar Vasdeo (Marathi), Thoppil Mohd Meeran (Tamil) Gyan Singh Shalir (Urdu), Leeladhar Jaguri (Hindi) Nagen Saikia (Assamese), Chander Sekhar Rath (Oriya), M. Chidananda Murthy (Kannada), Jaswant Singh Kanwal (Punjabi), Shyam Dev Prashar (Sanskrit), Ishwar Anchal (Sindhi), Ajanta (Telugu) are the recipients of these awards.

Sangeet Natak Akademi Awards 1998: President, Mr. K.R. Narayanan presented (New Delhi : December 9, 1998) the prestigious Sangeet Natak Akademi Awards for 1998 to 23 eminent artists including 12 musicians, six dancers and five theatre personalities :

The musician-awardees were : Laxman Krishnarao Pandit (Hindustani vocal), Lalji Raghunath Gokhle and Swapan Chaudhari (Tabla) Sisir Kanta Dhar Chaudhury and Tiruvengadam Rukmini (Violin), M. Balasubramania Sarma (Carnatic vocal), Kesi Narayanswamy (Flute) and Satish Bhatia (Creative).

In the dance and theatre category, the awardees were:- Kanaka Srinivasan (Bharatanatyam), Gangadhar Pradhan (Odissi), M. Vasudevan Nair (Kathakali), Tondon Devi (Manipuri), Rajkumar Bhogen Singh (Acting), Bharu

Bharti (Direction), H.S. Shiva Prakash and Moti Lal Kemu (Piyawright) and Mansukh Prabhulal Joshi (Other aspects of theatre).

Other recipients were : Arghya Sen (Rabindra Sangeet), Pithukuli Murugadas (Bhajan), Y. Ranjana Devi (Natyasa-sankirtan), Keshav Laxman Badge (Gondhal) and P.R. Thilagam (Kuravanji).

Sangeet Samradhee: Renowned vocalist Kishori Amonkar was conferred for this award (Rs. 2 lakh and citation) for her contribution to Indian classical music in the last 50 years.

Sanskriti Awards: Mogall Ganesh (Literature), Purushottam Singh Thakur (Journalism), M.S. Umesh (Art) and J. Jaya Kumar (Theatre), were selected for the Sanskriti Awards for 1997 for their outstanding contribution to their respective fields. Instituted by Sanskriti Pratishthan, each award carries a citation and a prize of Rs. 20,000.

Sarala Award : Eminent Oriya novelist Bibhuti Patnaik on June 14, 1999 was presented the coveted Sarala Award for excellence in literature. The award carries a citation, a shawl and Rs. 50,000.

Saraswati Award: Sarvaswari Sunderlal Bahuguna of Chipko Movement, Hridaynath Mangeshkar, Noted Musician, Prominent Wrestler Dara Singh, Sudhanshu Shastri, Ved Vidy, Pt. Rudynath Mangeshkar and R.A. Mirajkar, both social service were conferred for 1998 Saraswati Award instituted by Sri Kailashnath Trust Nashik.

Saraswati Puraskar : Melody queen Lata Mangeshkar, social worker from Sangamner, Bhusahes Thorat and Vedic expert from Ujjain, Dr. Yugal Kishor Mishra were awarded Saraswati Puraskar in Nashik, on January 18, 1999. The awards, each carrying cash prize of Rs. 25,000, a silver idol of Goddess Saraswati and a shawl, were presented to them in recognition of their outstanding contribution in their respective fields.

Saraswati Samman: Dr. Shankha Ghose was awarded the country's highest and most prestigious literary award, Saraswati Samman, for his collection of Bangla poetry, *Gandharba Kabitaguchcha*.

The Samman, instituted by the K.K. Birla Foundation, carries a cash prize of Rs. 5 lakh. It is given every year for an outstanding literary work written in any Indian language during the past ten years.

The previous awardees of the Saraswati Samman are : Dr. Harivanshrai Bachchan (1991), Mr. Rama Kant Rath (1992), Mr. Vijay Tendulkar (1993), Dr. Harbhajan Singh (1994), Mrs. Balamani Amma (1995), Shams-ur-Rahman Farouqui (1996) and Manubhai Pancholi "Darshak" (1997).

Scholarly Achievement Award : Mr. Sitaram Sharma, Deputy Secretary-General of the World Federation of United Nations Association was presented the Scholarly Achievement Award by the Institute of Oriental Philosophy on August 20, 1999. The award was given to him for his contribution to the promotion of peace and culture throughout the world through his dedication to research and the advancement in the field of philosophy and science.

Screen-Videocon Awards : The Screen-Videocon Awards ceremony was held in Mumbai on January 16, 1999. Actor-turned politician Mr. Sunil Dutt was presented the Lifetime Achievement Award. Ms. Asha Bhosle was honoured for her contribution to Indian music, especially in the motion picture genre. The best actor award went to Ajay Devgan for *Zakhm*. Kajol was presented the best actress award for *Dushman*. The film *Kuch Kuch Hota Hai* won awards in four categories—best direction, best picture, best comedian and best music. The best direction statuette went to Karan Johar.

Shankar Puruskar: Dr. Shashi Prabha Kumar was selected for Shankar Puruskar 1998 in recognition of her scholarly contribution *Vaisesika Darsana Mein Padartha-Nirupana* while, Prof. Krishna Narain Prasad "Magadha" was the recipient of 1997 Shankar Puruskar for his scholarly work *Vagdevi Saraswati*.

The Shankar Puruskar for 1996 was awarded to Mr. Brij Mohan Pande by the K.K. Birla Foundation on March 21, 1997. Named after Adi Shankaracharya, the award is given to an individual for outstanding work on Indian Philosophy, Culture and Art during the past ten years. This is the first time that an archaeologist has got the award. Mr. Pande has got the award for his work *Puratattva Prasanga*.

Shanti Swarup Bhatnagar Awards : Nine scientists were selected for Shanti Swarup Bhatnagar Awards for 1999—the nation's highest award for Science by the Council of Scientific and Industrial Research. Mr. V. Sampathkumaran and Mr. Sunit Mukhi from Tata Institute of Fundamental Research, Mumbai were selected to share the prize in physical sciences for their outstanding work on condensed matter physics and the string theory respectively. Mr. Siddhartha Roy of Bose Institute, Calcutta and Mr. V. Nagaraja from the Indian Institute of Science, Bangalore were chosen for their contribution in studying gene expression in different systems. Mr. Ganesh Prasad Pandey of National Chemical Laboratory, Pune and Mr. Deb Shankar Ray, from Indian Association for the Cultivation of Science (IACS), Calcutta will share the award for

their significant work in the organic synthesis and the spectroscopy respectively, in the field of chemical sciences while Mr. Narashimhan of the IISC was selected for the award in engineering sciences for his outstanding contribution in the field of fracture mechanics. The Delhi-based scientist, Mr. Rajeeva Laxman Kurandikar from the Indian Statistical Institute was selected for the award in mathematical sciences for his work on the probability theory. Mr. Chintalagiri Mohan Rao of Hyderabad-based Centre for Cellular and Molecular Biology was selected for his work on cataract. No award was given for the earth sciences. Each award carries a citation, plaque and Rs. 1 lakh.

Shikhar Samman: Kathak dancer Biju Maharaj was on December 23, 1996 honoured with the "Shikhar Samman" for lifetime achievement while veteran litterateur Kamleshwar has been commended for his forays into writing for television in the biennial "Adharshila" awards.

Shrimati Rattan Sharma Smriti Bal Sahitya Puraskar : Noted children fiction writer Girirajsharan Aggarwal of Uttar Pradesh was conferred the Shrimati Rattan Sharma Smriti Bal Sahitya Puraskar for his book *Aao Aate Mein Chalein* on October 25, 1999. Instituted by Dr. Rattan Lal Sharma Smriti Nyas, the award carries a citation, a memento and a cash prize of Rs. 15,000.

Smita Patil Memorial Award: Madhuri Dixit was on September 19, 1996 conferred the Smita Patil Memorial Award for Best Actress in recognition of her outstanding performance in Hindi films. She got the award for her performance in "Tezaab" in 1988, "Ram Lakhan" in 1989, "Dil" in 1990, "Saajan" in 1991, "Beta" in 1992, "Hum Aapke Hain Koun" in 1995 and several other films.

Sulabh Award: The Rajiv Gandhi Memorial Sulabh Sanitation Award was on August 19, 1995 conferred on the Calcutta-based All India Institute of Hygiene and Public Health, by the Lok Sabha Speaker, Mr. Shivaraj Patil.

Sulabh Habitat Award : Mr. Amod Kanth, Jt. Commissioner Dathi Police and General Secretary of Prayas, is the recipient of this award for his initiative in organising assistance for street children.

Swaralaya Puraskaram : Sarod maestro Ustad All Akbar Khan was awarded Swaralaya Puraskaram on February 5, 1999 in recognition of his contribution to the Indian music. The award comprises a citation, statute and Rs. 1 lakh.

Tansen Samman : Renowned vocalist Pandit C.R. Vyas was selected for Tansen Samman for 1999 on November 9, 1999 for his outstanding contribution to Hindustani classical music. Trained

In three different gharanas—Klrana, Gwallor and Agra—Pandit Vyas has evolved his own distinctive style. He has created several ragas including *Shiv Abhogi* and *Dhankoni-Kalyan*. Instituted by the Madhya Pradesh Government, the award carries a citation and a cash prize of Rs. 1 lakh.

Third World Academy of Sciences Awards : Dr. B. Srilam Shastri of the Indian Institute of Science, Bangalore and Dr. Biman Bagchi of Calcutta were selected for the Third World Academy of Sciences (TWAS) Awards in Basic Sciences for 1998, the Academy announced on April 28, 1999. Dr. Bagchi was chosen for Chemistry while Dr. Shastri was chosen for the Physics. Each year, the TWAS awards five prizes to individual scientists from developing countries who have made outstanding contributions to the advancement of Basic Sciences.

Thirumalamba Award : Gujarati writer and social activist Dr. Himanshi Shelat was presented the Nanjanaguder Thirumalamba Award on June 26, 1999. She won the prestigious award for her book *Platform Number Chaar*.

Thulaseevanam Award : Pandit Bhimsen Joshi, noted Hindustani classical music exponent was chosen for the first Thulaseevanam Award for his contribution to music on April 5, 1999. Instituted by Thulaseevanam Art and Culture Trust, Thiruvananthapuram, the award carries a cash prize of Rs. 1 lakh.

Udyog Ratna: Dr. V. Kurlen, Chairman National Dairy Development Board and the moving spirit behind "Operation Flood" in the country, was on February 22, 1996 awarded the "Udyog Ratna" for his outstanding contribution in the field of dairy and cooperative through the popular brand name "Amul".

V. Shantaram Award : Ms. Sumati Gupte-Joglekar has been selected for the V. Shantaram Award for 1999. The award instituted by the Cultural Department of Maharashtra, carries a cash prize of 1.25 lakh.

Vachaspati Puraskar: Prof. Rewa Prasad Dwivedi was selected for the sixth Vachaspati Puraskar for 1997 for his poetic work in Sanskrit *Svatantryasambhavam* while the 1996 award was conferred on Sanskrit writer Sribhasyam Vijayasaratthi for his poetic work *Bharatha Bharati*.

The first Puraskar for Sanskrit writing was given to Dr. Jagannath Pathak, Principal of Ranveer Kendriya Sanskrit Vidyapeeth, Jammu, for his work, *Mndvika*. This Puraskar carries a cash award of Rs. 50,000 for outstanding Sanskrit works published during the last ten years.

Vallathol Award : Prof. S. Gupta Nair was selected for 1999 Vallathol Award, a prestigious literary award in recognition of his works in Malayalam on September 6, 1999.

Veer Savarkar Award : Nuclear scientists of the Pokhran II tests were conferred the Veer Savarkar Award in Pune on May 28, 1999. The Atomic Energy Commission Chairman Mr. R. Chidambaram received the award carrying Rs. 1 lakh in cash on behalf of the scientists.

Venu Menon Awards : The first governmental effort to give recognition to the welfare activity was started on February 19, 1999 with the presentation of Venu Menon Animal Allies Awards.

Prominent among the awardees was Ms. Maneka Gandhi, the Union Minister of State for Justice and Empowerment who was given the Venu Menon Lifetime Achievement Award carrying a citation and a statuette. Ms. Kamlabai Shinde, a Mumbai cobbler, was presented the Venu Menon Animal Allies Award for running an animal shelter near the Bandra railway station with her meagre means. The award carries a cash prize of Rs. 25,000, a citation and statuette. The Venu Menon Young Achiever's Award was presented to a teenager Satya Priya Gautam, founder-member of the Corbett Nature Club, which is engaged in protecting animals. The award carries Rs. 5,000 citation and statuette.

Visvesvaraya Awards : Three scientists were selected for the Sir Visvesvaraya Award for Lifetime Achievement on March 31, 1999 instituted by the Government of Karnataka. They include Dr. K.N. Raju, former Director of NAL, Prof. A.R. Vasudeva Murthy of the Department of Inorganic Chemistry, Indian Institute of Science (IISc) and Prof. G. Suryan, Department of Physics, IISc.

Vyas Samman : Noted Hindi writer Mr. Gobind Mishra was awarded the Vyas Samman 1998, for his book *Paanch Anganon Wala Ghar* on December 20, 1998. The award is given by the K.K. Birla Foundation to an outstanding work in Hindi, published during the last ten years.

Zakir Hussain Award: Noted educationist of Qatar B.K. Mohammad Kunhi has been selected for the prestigious Zakir Hussain Memorial Award for Education for 1995.

Zee Awards : Yash Chopra's *Dil To Pagal Hai* bagged four Zee Cine awards for best art direction, best choreography, best special effects and best cinematography while Manmohan Ghai's *Pardas* won two awards for best sound recording and best background score. J.P. Datta's *Border* got awards for best song recording and best editing.

10. Honours And Awards : International

Abdus Salam Prize: The Indian physicist, Prof. M.G. K. Menon, was given the Abdus Salam prize for science and technology of the Third World Academy of Sciences based in Trieste, Italy. It is the academy's highest award.

Albert Schweitzer Gold Medal: Dr. Mehar Master Moos President of Zoroastrian College, an international institute for alternative medicine is the first Indian to receive Poland's prestigious award.

Ambedkar International Award : Staunch Ambedkarite social worker. Uttam Kumar Pariya, member Raj Parishad (Nepal) has been selected for the 1998 Ambedkar International award while Mr. Sohan Lal Sanpala was the recipient of the 1997 Award for spreading Dr. Ambedkar's ideology in European countries.

Amnesty International Award : Pakistani journalist and Editor of *Friday Times*, Najam Sethi was chosen for the 1999 Amnesty International "Special Award for Human Rights Journalism Under Threat". The award is given to a journalist every year whose "dedication to exposing the truth may have been at considerable personal cost".

Asiatic Society Award: Dr. Haripriya Rangarajan, wife of Andhra Pradesh Governor, Dr. C. Rangarajan, was awarded the Asiatic Society's medal for the year 1998 for her book *Varaha Images in Madhya Pradesh—An Iconographic Study, 1997*.

Berlin International Film Festival Awards: Mani Ratnam's *Dil Se* shared the Network for Promotion of Asia Cinema (NETPAC) Award with *2H* by Li Ying from Japan at the Berlin International Film Festival Awards ceremony in Berlin on February 21, 1999. *The Thin Red Line* by Terrence Mallick won the Golden Bear. Milune's *Last Song* by Danish director Sorgen Kragh-Jacobsen won the Silver Berlin Bear. The Silver Bear for best actress went to Julianne Kohler and Maria Schrader for the German film *Aimee and Jaguar* by Max Farberbock and the best actor award went to Michael Gwisdek for *Nachtgestalten* (Night Shapes) by Andreas Dresen.

Best Book Award of the Commonwealth Writers' Prize for Eurasia: *Love and Longing in Bombay* by Vikram Chandra was selected for 1997 award.

Booker Prize : The South African author J.M. Coetzee was selected for the Booker Prize for 1999

for his novel *Disgrace* on October 24, 1999. He is the only author to win the prestigious literary prize twice—in 1983 for *Life and Times of Michael K.* and in 1999 for *Disgrace*. The prize carries a cash prize of £21,000.

British Academy Awards : Shekhar Kapur's *Elizabeth* picked up five British Academy Awards on April 11, 1999 in London. The British Academy of Film and Television Arts (BAFTA) picked up *Elizabeth* for awards as Best Actress (Cate Blanchett), Outstanding British Film, Best Cinematography, Best Make-up (it had won an Oscar in this category in March 1999) and Best Film Music. The Best Film award, however, went to *Shakespeare in Love*, as also the award for Best Supporting Actress (Judith Dench, another Oscar awardee for the same film). The Best Actor award was bagged by Roberto Benigni for his performance in the Italian film, *Life is Beautiful*, which had also won him an Oscar earlier.

British Literature Prize : Mr. Harold Pinter won Britain's biggest literary prize for a lifetime's achievement as playwright and screenwriter.

Mr. Pinter won the £30,000 (\$48,000) David Cohen British Literature Prize on March 15, 1995 for work ranging from his acclaimed plays, "The Birthday Party" and "The Caretaker" to screenplays for such films as "The French Lieutenant's Woman" and "The Remains of the Day".

Cannes International Film Festival Awards : Cannes International Film Festival Awards were presented in Paris on May 23, 1999. Indian director Murali Nair's film *Marana Simhasanam* won the Golden Camera award. The coveted Palme D'Or Award for Best Film went to *Rosetta* by Belgian directors Luc and Jean Pierre Dardenne. *Rosetta*'s heroine Belgian actress Emile Dequenne shared the Best Actress Award with French actress Severine Caneela in *Humanity*.

Commonwealth Award: Dr. Lalit Kishore, Asstt Commissioner, Guwahati-based Kendrya Vidyalaya Sangathan, bagged the award for the seventh time in 1999 in recognition of his innovative methods for teaching science.

Commonwealth Writers Prize : A Delhi University lecturer, Ms. Manju Kapoor bagged the 1998 Commonwealth Writers Prize for her novel, *Difficult Daughters*.

The award is given annually by the Commonwealth Foundation, and carries £10,000.

Earth Day International Environmental Award: Mr. Thomas Kocherry, Coordinator of the World Forum of Fish Harvesters and Fish Workers, was conferred 1998 award for "sotting up an alliance of 8 million fish workers in India".

Eliot Prize: Les Murray, an Australian poet, who wraps vast contemplations of mortality in dry, easy wit won Britain's prestigious T.S. Eliot Prize on January 13, 1997.

He won £5,000 (\$8,000) for his volume *Subhuman Redneck Poems*.

Forbes' Company of the Year: *Forbes* magazine has named the US drug maker Pfizer its Company of the Year. *Forbes* published in a six-page profile of Pfizer, the New York-based group that came into limelight in April 1998 by launching Viagra, the world's first prescription pill for the treatment of impotence.

Freedom Prize 1998: Eminent economist, Prof. Jagdish Bhagwati was awarded the 1998 Freedom Prize of the Max Schmidheiny Foundation. A noted free trade expert and Arthur Lehman Professor of Economics as well as Professor of Political Science at Columbia University, United States, Prof. Bhagwati was given the award along with the European Commission Vice-President, Mr. Leon Brittan and the former President of Costa Rica, Mr. Jose Maria Figueres Olson. The Swiss Foundation every year honours persons and institutions who have contributed to the maintenance and further development of a free social and economic order.

Friendship Medal: An Indian wheat scientist, Mr. Srijaya Rajaram was presented China's Friendship Medal, the country's top award for a foreigner in recognition of his contribution to Beijing's agricultural sector. He was conferred the award in Beijing on June 1, 1999.

Award: Bangladesh PM Sheikh Hasina was chosen for 1998 Gandhi Peace Award for her contribution in promoting religious harmony and grass roots democracy in the country while renowned Servodaya leader & freedom fighter, Manmohan Choudhary was conferred the 1997 award. The award is given by Mahatma Gandhi Foundation in Oslo.

Gold Panda Award: Britain's Prince Philip, Duke of Edinburgh, presented the world's top international conservation award of the World Wildlife Fund (WWF), the Gold Panda Award to the UAE President, Sheikh Zayed Bin Sultan Al Nahyan on March 8, 1997 in recognition of his work on the issues of environmental conservation. Prince Philip is the President Emeritus of the WWF.

Golden Bear Award: The Golden Bear Award for the best film at the 46th annual Berlin Film Festival was awarded on February 26, 1996 to

"Sense and Sensibility", an American-British co-production directed by Ang Lee.

Golden Globe Awards: The 56th Golden Globe Awards were presented at Beverly Hills in Los Angeles (US) on January 24, 1999. Comic actor Jim Carey won the best drama actor award for his role in the satire *The Truman Show* while British actress Cate Blanchett picked up Golden Globe for Best Actress in a Motion Picture-Drama for her role in the historical drama, *Elizabeth*. Steven Spielberg's realistic war movie *Saving Private Ryan* won the Golden Globe award for best drama. The best director award also went to Spielberg. Romantic comedy *Shakespeare in Love* swept three Golden Globe Awards for best screenplay, best actress in a comedy while scriptwriters Marc Norman and Tom Stoppard won best screenplay. Best actor in a motion picture musical or comedy went to Michael Caine for his role in *Little Voice*. Noted actor Jack Nicholson was honoured with the Cecil B. De Mille Award for his lifetime achievement.

Golden Palmes Award: Mr. Shohei Imamura, 70, one of the finest directors of Japan, won the Golden Palmes Award at the 50th Cannes International Film Festival for his film, *The Eel*. He had earlier won the Golden Palmes for his 1983 venture, *The Ballad of Narayama*. In *The Eel*, the main role was played by Japan's top actor, Koji Yakusho.

Golden Peacock Award: *The King of Masks*, a Chinese feature film was awarded the Golden Peacock for being the best film in the Asian competition section in the 29th International Film Festival (New Delhi) while the Silver Peacock award was bagged by *Paper Planes* from Iran.

Grammy Awards: Lauryn Hill, the 23-year-old hip hop star with her debut solo album, *The Miseducation of Lauryn Hill*, won five Grammy Awards on February 24, 1999. Her album was named best album of the year. Clinching the best new artist award, Hill also won the Rhythm and Blues song and female Rhythm and Blues vocal performance awards for her hit song, *Doo Wop (That Thing)*. She also won the Rhythm and Blues Album award. With her trophy haul Hill broke Carol King's 1971 record for most awards nabbed by female artist in a single night with four awards for her *Tapestry* album. *My Heart Will Go On* song of *Titanic* won the Grammy for Best Female Pop Vocal Performance for Celine Dion. It was also adjudged as the Best Song Written for a Motion Picture or Television. Shania Twain was presented two Grammys for Best Country song and Best Female Country vocal performance. Madonna won her first musical Grammys, including best Pop Album for her excursion into electronica, *Ray of Light*. She also

won Best Dance Recording and Best Short Form Music Video.

Habitat Award for India: India received an award for the "Best Performance among Developing Nations" and another for the "Best Overall Performance among all the 113 Participating Nations" at the Habitat II Conference in Istanbul in June 1996. The awards were in recognition of developing a set of United Nations Centre for Human Settlement (UNCHS) data recommending housing and urban indicators and new tools for efficient management of housing and urban programmes.

Honest Man of the Year Award : Mr. Khushwant Singh, an eminent journalist and author, has been selected for the Sulabh International Honest Man of the Year Award for 1998 in recognition of his honesty and moral courage to speak out the truth through his brilliant and readable writings. The award which carries Rs. 10 lakh in cash, a golden plaque, a gold pendant and a citation, is given by Sulabh International Social Organisation annually to an outstanding personality who has shown the highest level of public honesty and commitment in his/her work.

Impac International Literary Award : British writer Andrew Miller on May 24, 1999 bagged the world's richest prize for a single work of fiction—Ireland's 1,00,000 Irish pound (\$1,35,300) Impac International Literary Award for his debut novel *Ingenious Pain* about an 18th century man unable to feel pain.

Indira Gandhi Prize for Peace, Disarmament and Development : Mr. M.S. Swaminathan has been selected for Indira Gandhi Prize for Peace, Disarmament and Development for the year 1999 in recognition of his contribution in the field of agriculture in the developing world while, Mr. Muhammad Yunus, founder of the Grameen Bank in Bangladesh was conferred the award for 1998 on November 19, 1999 in recognition of his "invaluable contribution to developing a methodology for abolishing poverty". The award carries Rs. 25 lakh in cash and a citation.

Insignes de Commandeur de L'Ordre des Arts et des Lettres : Noted Hindi and Bengali actress, Sharmila Tagore, and actor Soumitra Chatterjee, were selected for the Insignes de Commandeur de L'Ordre des Arts et des Lettres the highest award for artistes, given by the French government in recognition of their highly commendable lead roles in several of Satyajit Ray's films.

International Anti-Slavery Award : An Indian couple, and human rights activists Mr. Vivek Pandit and Mrs. Vidyullata Pandit were selected for International Anti-Slavery Award for 1999 for their

efforts to free and rehabilitate bonded and child labourers in Maharashtra. The award is given by Anti-Slavery International (ASI) in London.

International Commonwealth of Learning President's Award : The distance education programme under the Panchayati Raj project, produced by Prof. M. Aslam of Indira Gandhi National Open University (IGNOU) was conferred the International Commonwealth of Learning President's Award on May 30, 1999. The award was given in recognition of the unique course for empowerment of rural masses through knowledge.

International Dairy Person : Dr. Amrita Patel, Managing Director, National Dairy Development Board was conferred the 1997 award.

International Felicitation Award: Prof. Dilip K. Bose, Chairman Central Pollution Control Board has been conferred this award instituted by the World Environment Congress and its NGO affiliates.

International Film & Media Music Award: India's sitar maestro Pt. Ravi Shankar and Italy's Ennio Morricone received the coveted International Prize for Film and Media Music for 1999 in Bonn on July 24, 1999. The award has been instituted by the German government's Art and Exhibition Centre.

International Guest Scholar Award: Dr. Ashok Kumar Hemal of All India Institute of Medical Sciences was conferred this award by the American College of Surgeons in recognition of his outstanding work in laparoscopic surgery.

International Man of the Year : Mr. Laxmi Narayan Piparsonia, Consul General of India in Ukraine and Moldova, has been nominated for 1996-97 award while Prof R.K. Khurana Vice-Chancellor, Indira Gandhi Open University was conferred 1995-96 award by the International Bibliography Centre, U.K

International Press Freedom Awards : Noted Pakistani journalist Mr. Najam Sethi and his wife Mrs. Jugnu Mohsin were on October 22, 1999 selected for International Press Freedom Awards, given by the Committee to Protect Journalists (CPJ), a New York-based non-governmental agency

International Woman of the Year Award: Noted Bharatnatyam exponent, Ms. Komla Varadan was selected for this award by the Cambridge-based International Biographical Centre.

Irving Blumberg Human Rights Award : Mr. Clarence J. Sundaram, an ethnic Indian, was the recipient of this award, instituted by American Association for Psychological Rehabilitation, for his work for the disabled.

Jamnatat Bajaj Award : Prof. Joseph Rotblat, a noted British nuclear physicist was selected for the Jamnatat Bajaj International Award on September 17, 1999 for promoting Gandhian values outside

India. Among the other recipients of the awards are Mr. Narayan Desai of Sampooran Kranti Vidyalyaya, Surat, for his outstanding contribution in the field of constructive work; Dr. Aljoy Kumar Basu of Society for Rural Industrialisation, Ranchi, for the application of science and technology for the rural development while Ms. Saraswathi Gora of Alchemist Centre, Vijayawada, was selected for Janakidoli Bajaj Award for the uplift and welfare of women and children. Each of the awards carries a citation, a trophy and a cash prize of Rs. 2 lakh.

Japanese Fellowship in Micro-Neuro Surgery: Doctor F. B. Singh, Senior Consultant and head of the Neurosurgery at Bokaro General Hospital, Bihar was awarded the Fellowship in Micro-neurosurgery with honours award by the Fujita Health University of Japan. Dr. Singh is the first foreign doctor who received the honours award for working in this university.

Jesse Owens Global Award: Mr. Nelson Mandela, the former President of South Africa, was presented the Jesse Owens Global Award in Johannesburg on September 22, 1999 in recognition of his efforts to promote peace and reconciliation through sport. A large gold and silver globe depicting athletes from the ancient Greek sculptures was given by International Amateur Athletic Association (IAAF).

Jorg Kandutsch Award: The International Organisation of Supreme Audit Institutions has conferred on the Comptroller and Auditor-General of India its highest honour, the Jorg Kandutsch Award. Named after a former President of the Austrian Court of Accounts, the award honoured the supreme audit institution of India for its "outstanding professional contribution in the field of public auditing".

Prize: Prof. Marian Ewurama Addy of a professor of Bio-chemistry at the Ghana University and Mr. Emil Gobrialian, the Director General of the Drug and Medical Technology Administration in Armenia and Vice-President of the National Academy of Sciences, were jointly conferred the 1999 Kalinga Prize for the Popularisation of Science on November 8, 1999.

Prof. Ennio Candotti, Professor of Physics, Universidade Federal do Espírito Santo and Ms. Regina Paz Lopez, Managing Director of ABS-CBN Foundation, Philippines were jointly conferred the Kalinga Prize for Popularisation of Science, 1998 in New Delhi on April 7, 1999. Established in 1951 by UNESCO at the initiative of Mr. Bijju Patnank, founder-chairman of the Kalinga Foundation Trust, Kalinga Prize is presented annually to a person or persons who have made outstanding contribution to the interpretation of

science and technology. The award carries a silver medal and a cash component of £ 1000.

Lifetime Achievement Award: The famous Italian director Bernardo Bertolucci known for the megahits like *The Last Emperor* and *The Little Buddha* was conferred the Lifetime Achievement Award at the 30th International Film Festival of India (IFFI '99), in Hyderabad on January 16, 1999.

Langley Gold Medal: Two of the Apollo-11 crew members, Neil Armstrong and Edwin Aldrin received the prestigious Langley Gold Medal for aviation in Washington on July 20, 1999 to mark the 30th anniversary of man's first landing on the moon.

Lifetime Commitment Award: The Nool Foundation and the United Nations Development Fund for Women on October 27, 1995 honoured Mother Teresa with a Lifetime Commitment Award.

Mahatma Gandhi World Peace Award: Bangladeshi PM, Sheikh Hasina Wajed, was selected for 1998 Mahatma Gandhi World Peace Award. Earlier, Dr. Hogen Fukunaga, a Japanese poet, lecturer and author of more than 70 books had won this award on October 2, 1995.

The award, instituted by California-based Gandhi Foundation, comprises a bust of Mahatma Gandhi and a cheque for \$100,000.

Mondello Award: Noted Writer and Journalist Khushwant Singh was conferred this award in 1997 for his novel *Train to Pakistan*. He is the first Indian to get this prize.

MTV Movie Awards: *There's Something About Mary* won the Best Movie Award at the MTV Movie Awards in Santa Monica in California on June 6, 1999. Jim Carrey bagged the Best Male Award in a film for his performance in *The Truman Show* while Cameron Diaz clinched the Best Female Award for her role in *There's Something About Mary*.

Muclo Atheyda Cancer Prize: Dr. Prafulla Desai was selected for the award of 1998 prize in recognition of his significant contribution to the control and treatment of cancer in India & abroad.

National Heritage Award: US first lady Ms. Hillary Rodham Clinton presented the 1997 awards to Sarod Maestro, Ustad Ali Akbar Khan and 10 others for outstanding contribution to music.

Nobel Prizes: Following are the recipients of Nobel Prizes for 1999:

Peace: Medecins Sans Frontieres (Doctors without Borders), a medical aid organisation, wins the 1999 Nobel Prize for Peace for its pioneering humanitarian work in several countries.

Physics: Dutch physicists, Dr. Gerardus 'T Hooft and Dr. Martinus Veltman won the 1999 Nobel Prize for Physics. They were awarded the prize "for elucidating the quantum structure of electroweak interactions in Physics".

Chemistry : The Egyptian scientist, Dr. Ahmed Zewall had been selected for the 1999 Nobel Prize for Chemistry "for showing that it is possible with rapid laser technique to see how atoms in a molecule move during a chemical reaction".

Economics : Canadian born economist, Mr. Robert Mundell wins the 1999 Noble Prize for Economics while Prof. Amartya Sen of India, presently Master at Trinity College, Cambridge, was the first Asian to bag the 1998 Prize in Economics for his sterling contribution to Welfare Economics and in particular his research into causes of famine and poverty. He is the sixth Indian to be conferred a Nobel Prize and thus joins the galaxy of other great Indian Nobel Prize laureates like Rabindranath Tagore (Literature-1913), Prof. C.V. Raman (Physics-1930), Dr. Hargobind Khurana (Medicine-1930) Mother Teresa (Peace-1979) and Dr. Subrahmanyam Chandrasekhar (Physics-1983).

Medicine : German cell and molecular biologist Prof. Guenter Blobel won the 1999 Nobel Prize for Medicine on October 11, 1999 for his discovery that "proteins have intrinsic signals that govern their transport and localisation in the cell."

Literature : The German novelist, Mr. Guenter Grass won the 1999 Nobel Prize for Literature on September 30, 1999 for his novel *The Tin Drum*. The Swedish Academy said in the citation that it had awarded the prize to Mr. Grass "whose frolicsome black fables portray the forgotten face of history... When Guenter Grass published *The Tin Drum* in 1959, it was as if German literature had been granted a new beginning after decades of linguistic and moral destruction".

Nobel Prizes are awarded every year under the will of Alfred Bernhard Nobel, Swedish chemist, engineer and dynamite inventor, who died in 1896. The interest of the fund is divided annually among the persons who have made the most outstanding contribution in the field of physics, chemistry and physiology or medicine, who have produced the most distinguished literary work of an idealist tendency, and who have contributed most towards world peace. The Nobel Prize for Economic Sciences was established in 1967 by Riksbank, the Swedish Central Bank, in celebration of its 300th anniversary and was awarded for the first time in 1969. Other awards started in 1901.

Nazrul Awards : Noted litterateur Annada Shankar Ray was selected for the prestigious Nazrul Award by the West Bengal Government on May 20, 1999 in recognition of his lifetime contribution to enrich Bengali literature. The award carries a cash prize of Rs. 25,000 and a citation.

Oscar Awards : The romantic comedy *Shakespeare In Love* won seven Oscars including best picture and best actress (Gwyneth Paltrow)

best supporting actress (Judi Dench), original screenplay art direction, costume design and musical or comedy score at the 71st Annual Academy Awards in Los Angeles on March 21, 1999. Steven Spielberg's World War II epic *Saving Private Ryan* won him the best director award and four other Oscars. Roberto Benigni of *Life is Beautiful*, became the first star of a foreign film to win as best actor. Judi Dench in *Shakespeare in Love* and James Coburn, in *Affliction* won best supporting actress and actor respectively. Shekhar Kapoor's directorial venture *Elizabeth* won Oscar for make-up. Noted director Ella Kazan was presented the Lifetime Achievement Award.

At the 70th Annual Academy Awards in Los Angeles on March 23, 1998, the \$200-million disaster epic and all-time box-office champion, *Titanic* won 11 Oscars including best picture, best director, best film editing, best original song, best costume design, best sound, best sound effects, editing, best visual effects while Jack Nicholson and Helen Hunt bagged best actor and best actress awards in *As Good as it Gets* Rabin Williams won the best supporting actor (*Good will Hunting*) and Kim Basinger, the best supporting actress awards (*LA Confidential*).

Paulos Mar Gregorios Award : Dr. Varghese Kurien, architect of India's white revolution (Operation Flood) was on July 28, 1999 selected for Paulos Mar Gregorios Award for 1999 in recognition of his pioneering work in the areas of community-based development, rural development and co-operative movement. The award carries Rs. 1 lakh in cash and a citation.

Polar Prize: Indian star maestro Ravi Shankar and Ray Charles, 12-time Grammy Award winner, were honoured with Polar Prizes by the Royal Swedish Academy of Music on January 20, 1998 for "bringing eastern music to western audiences" and for influencing generations of singers and musicians" respectively.

Pride of India Award: The eminent journalist and social activist, Mr. Kuldip Nayar, was honoured with the prestigious Pride of India Award for 1996 by the American Federation of Muslims (AFM) at Newark in New Jersey (USA) on October 5, 1996. He was presented the award for his exemplary work in promoting communal harmony, welfare of the downtrodden and excellence in journalism.

The AFM is an umbrella organisation with members from India, the US and Canada.

1999 Pulitzer Prizes : Michael Cunningham won the 1999 Pulitzer Prize for fiction for his book, *The Hours*, on April 12, 1999. The drama award was presented to *Wit*, a play by Margaret Edson. The biography prize went to *Lindbergh*, A. Scott Berg's book about the American aviator Charles Lindbergh.

The poetry prize was bagged by Mark Strand for *Blizzard of One*.

The *Washington Post* won the Pulitzer Prize for public service for a series on reckless gunplay by city police officers. The prize for breaking news reporting was awarded to Hrtford Curant, while the prize for investigative reporting went to the *Miami Herald*.

Pyramid Gold Award : Indian film "Terrorist" (in Tamil) won top honours including Pyramid Gold Award at the Cairo Film Festival (December, 1998).

Ramon Magsaysay Awards : The Ramon Magsaysay Awards were announced on July 26, 1999. Mr. Tasneem Ahmad Siddiqui, Head of Pakistan's Sindh Kuchchi Abadi Authority was selected for the award for *Government Service*. Ms. Rosa Rosal of the Philippine National Red Cross for *Public Service*, Ms. Angela Gomes, Head of Banchite Shekha, a Bangladesh women's organisation, for *Community Leadership*. Mr. Lin Hwai Min, founder of the Cloud Gate Theatre of Taiwan, shares the award for *Journalism, Literature and Creative Communication Arts*, with Mr. Raul Locsin, who runs Manila's *Business World Economic* daily. No award for *International Understanding* was awarded this year.

Robert F. Kennedy Human Rights Award : India's well-known anti-child labour activist Kailash Satyarthi was the 1995 recipient of the Robert F. Kennedy Human Rights Award.

The other winners of the award were Prof. Doan Viet Hoat and Dr. Nguyen Dan Que, two imprisoned Vietnamese human rights activists.

The three awardees shared the \$30,000 prize and each received a bust of the late Robert Kennedy, brother of President John F. Kennedy.

Rockwell Award : Mr. Anil Kakodar, Director, Bhabha Atomic Research Centre is the first Indian to receive the 1997 award instituted by International gy Institute.

Rolex Award : The 1996 Rolex award was presented to Captain Gorur R. Iyengar Gopinath for his contribution to the expansion of ecological silk farming in Karnataka.

The award consisting of gold chronometer and US \$ 10,000 was presented by the Managing Director of Rolex Singapore, Mr. Jeremy Ramsey.

The Rolex Awards were instituted in 1976—on the 50th anniversary of "Rolex Oyster", the world's first water and dustproof wrist watch—to encourage a spirit of adventure and enterprise in individuals worldwide by providing them financial support and recognition.

Roosevelt Freedom Award : Ms. Mary Robinson, the UN High Commissioner for Human Rights, and South Africa's Archbishop Desmond Tutu were awarded the 1998 Roosevelt Freedom Award.

Sakharov Prize : The East Timorese pro-independence leader, Mr. Xanana Gusmao was selected for the European Parliament's Sakharov Prize on October 28, 1999 in recognition of his "spirit of freedom". The prize carries \$14,200.

Screen Actors Guild Awards : Jack Nicholson and Helen Hunt won this top acting prize for the film "As Good as it Gets", while Gloria Stuart won a trophy for her supporting role in "Titanic" in New York in 1998.

Sasakawa Disaster Prevention Award 1997 : Prof. Anand Swarup Arya, Seismology expert, is the recipient of the prestigious UN award for 1997.

Seoul Peace Prize : UN Secretary General was conferred this prize worth \$ 2,00,000 prize for 1998 in recognition of his contribution to world peace.

Shapiro Fellowship : Journalist Gautam Adhikari, former Executive Editor of the Times of India, was selected as a Shapiro fellow at George Washington School of Media and Public Affairs; George Washington University, to teach "the role of media" in developing democracies focusing on the experience of India.

Sitara-e-Imtiaz : Thespian Dilip Kumar was awarded Pakistan's highest civil award, Sitara-e-Imtiaz, in recognition of his services in improving Indo-Pak relations.

Sophie Prize : Mr. Herman Daly of the University of Maryland, USA and Mr. Thomas Kocherry of India shared the annual \$100,000 Sophie Prize, one of the world's richest environment prizes in Oslo on May 26, 1999. The award was given to them for their work on alternatives to economic globalisation and free markets.

Space Medal of Honour : Ms. Shannon Lucid, celebrity astronaut who spent a record 188 days in space this year, became the first woman to be awarded the Congressional Space Medal of Honour by US President, Mr. Bill Clinton (December 2, 1996).

Sports Personality Of The Year And World Player Of The Year : France's Zinedine Zidane won the Reuters Sports Personality of the Year Award, elbowing Austrian skier Hermann Maier and American sprinter Marion Jones into the second and third place respectively. Zidane was named for another award—World Player of the Year—by the readers of the London-based English magazine *Football World*.

Star Of The Asian Games : The 28-year-old Japanese sprinter Koji Ito was voted the star of the 13th Asian Games adding a \$100,000 cheque to his three gold medals in December 1998.

Swarna Mayur Paryavaran Prabandhan Puruskar : Indian Oil Corporation's Mathura Refinery was conferred the Swarna Mayur Paryavaran Puruskar (Golden Peacock Environment

Management Award) for its novel contribution in the field of environment. The award was conferred by the World Environment Foundation.

Tata Awards : International awards totalling ₹2,33,000 (about Rs. 101.46 lakh) for the year 1995-96 were announced by the Lady Tata Memorial Trust in Bombay on June 17, 1995, on the eve of Lady Meherbai Dorabji Tata's death anniversary on June 18.

The awards are given annually for study and research in the diseases of the blood with special reference to leukemia.

The awardees were: Dr. S. Abraham (India), Dr. Jose Arambaru (Spain), Dr. F. Berditchevski (Russia), Dr. S. J. Chen (China), Dr. D. Macdonald (U.K.), Dr. R. Pettengell (U.K.), Mr. M. Strout (U.S.), Dr. J. Villadangos (Spain), Dr. S. Vincent (France) and Dr. S. Manie (France).

Templeton Prize : United States nuclear physicist and the theologian Ian Barbour was awarded the \$1.24-million Templeton Prize for progress in religion. The prize is the world's richest annual prize for achievement in any field.

Thorr Award : Congress President Sonia Gandhi was presented (New Delhi, August 11, 1999) the 1998 Thorr Award by MDM, Geneva in recognition of her contribution in upholding "the spirit of Thorr motto through perseverance, exemplary courage and determination in promoting the Rajiv Gandhi Initiative for Advancement of Human Civilization."

Titus Brandsma Award : Ignatius Gonsalves, Chief Sub-editor, *Malayala Manorma*, was selected for this year's award in recognition of his contributions to value, oriented journalism and commitment to integral human development.

U Thant Peace Prize : The Prime Minister of Nepal, Mr. Krishna Prasad Bhattaral, was awarded the U Thant Peace Prize for 1999 in recognition of his life-long commitment to peace and freedom. He was awarded the prize by the head of the Sri Chinmoy Centre International in New York on October 3, 1999.

UN Environment Award: The UN environment programme's 1997 annual award for "saving the drylands" was bagged by India for a joint forest management programme in Haryana run by Tata Energy Research Institute & Haryana Forest Deptt. while the Prize for 1996 worth \$ 200,000 was conferred upon the distinguished Indian scientist-cum-environmentalist, Dr. Trilok Nath Khosho, in New Delhi on November 30, 1996 in recognition of his outstanding contribution to the protection and management of the environment.

Instituted 12 years ago, the prize is awarded annually to leading environmentalists and

recognises the work of these individuals at the global level.

UN Population Award : The Danish head of the International Planned Parenthood Federation and an African group, fighting against female circumcision were the winners of the 1995 UN Population Award.

UN Vienna Civil Society Awards : Ms. Shanti Ranganathan, founder of the T.T. Ranganathan Clinical Research Foundation—one of India's leading institutions in fighting drug abuse—is among the four winners selected for the first ever UN Vienna Civil Society Award on July 2, 1999. The award is given to individuals or groups for outstanding work in fighting global crime and drug abuse.

UNDP Race Against Poverty Award : Six persons were selected for 1999 UNDP Race Against Poverty Award on September 7, 1999 in recognition of their success in overcoming poverty or promoting the fight against it. The six recipients are Dietrich Fischer of Germany, Victor Estrada Qulspe of Bolivia, Athanase Rwamo of Burundi, Abdallah Mohammed Omar Bagnl of Egypt, Mookda Intrasan of Thailand and Elmaz Alimovna Appazova of Ukraine.

UNEP Global 500 Award : Captain Krishnan Nair, owner of a hotel in Mumbai, and Ms Kruti Parekh, one of the world's youngest girl illusionists, were selected for the United Nations Environment Programme (UNEP) Global 500 Awards for the personal interest in greening not just the hotel premises but a major part of the city and for using magic to pass on the environment message respectively.

UNESCO's Cities for Peace Prize : Hanoi, the capital of Vietnam, was chosen as winner of UNESCO's Cities for Peace Prize for the Asia Pacific, it was announced by the Hanoi People's Committee on July 26, 1999.

UNESCO Literacy Prizes : India's National Literacy Mission (NLM) was selected for the UNESCO's *Noma Literacy Prize* for 1999 in recognition of its efforts to "galvanise activities towards national integration, conservation of the environment, promotion of women's equality and preparation of family customs and traditions besides producing teaching-learning materials, training establishing autonomous education bodies, creating educational awareness and raising the demand for quality and quantity of primary education. The award carries \$15,000 and a silver medal. The Corresponding Services of the Literacy Movement Organisation of Iran has been selected for *Malcolm Adiseshiah International Literacy Prize* for providing learning opportunities to those who seek knowledge but cannot attend literacy classes. The Family

Literacy Programme of the Basic Skills Agency, UK, was chosen for the *International Reading Association Literacy Award*. The *King Sejong Literacy Prize* has been shared by the Directorate for Adult Literacy and Training, Ministry of National Education, Niger and the Ministry for the Promotion of Women and Human Development, Peru.

UNESCO Music Award : Spanish pianist Alicia De Larrocha and Pakistani musician Nusrat Fateh Ali Khan were on October 20, 1995 awarded UNESCO's Music Prize in the West German city of Aachen.

Established in 1975, the prize is bestowed on musicians and organisations whose work has helped the development of music as well as prompted peace and cross-cultural understanding.

UNESCO Peace Prize : Bangladesh's Prime Minister, Ms. Sheikh Hasina Wajed and former US Senator, Mr. George Mitchell were selected for UNESCO's 1998 Felix Houphouët-Boigny Peace Awards on April 1, 1999. They were named for the Award in recognition of "their contribution to the resolution of conflicts in Bangladesh and Northern Ireland" respectively. The award carries 80,000 francs.

UNESCO Prize for Tolerance : Mr. Narayan Desai an Indian anti-nuke activist and the Joint Action Committee for People's Rights of Pakistan have been declared joint winner of \$40,000 UNESCO Madanjeet Singh Prize instituted by UNESCO for promotion of tolerance and non-violence on the occasion of UN year of Tolerance and 125 birth anniversary of Mahatma Gandhi.

To be known as UNESCO Madanjeet Singh Prize, the prizes are awarded biannually for outstanding work on tolerance and non-violence in scientific, artistic, cultural and communication fields. Ideas to families of victims who, like the Mahatma, died fighting religious intolerance.

UNESCO Prize for Creating Awareness in Human Rights : The Human Rights Commission of the Philippines and a Chilean academic shared the 1995 UNESCO prize for Creating Awareness in Human Rights. The Filipino Commission was selected for the award for its methodical training of the Filipino armed forces and the police.

Vikram Sarabhai Medal : Dr. James D. Baker, Administrator of National Oceanic and Atmospheric Agency (NOAA) and Under Secretary in Commerce Department, USA was awarded the 1998 fifth Vikram Sarabhai Medal in Washington on March 26, 1999. Dr. Baker was awarded the medal for his valuable contribution to space research in developing countries by organising the programme related to the NOAA Satellite Operational System and utilisation of the global data.

The award was instituted jointly by the Committee on Space Research (COSPAR) and Indian Space Research Organisation (ISRO) for recognising outstanding contributions to space research in developing countries and is given bi-annually.

Volvo Environment Prize : Noted Indian agricultural scientist, Dr. M.S. Swaminathan was presented the Volvo Environment Prize for 1999 on October 26, 1999 for his achievements as a plant breeder and administrator which led to dramatic increases in crop yields, his international leadership in agriculture and resource conservation and his deep concern for the poor and disadvantaged. The prize which was set up in 1988 and was first awarded in 1990 in New York, carries a cash prize of 1.5 million kroners.

WHO Director General's Medal : Dr. Harsh Vardhan, Health Minister of NCT Government of Delhi, was selected for this prestigious award for his crusade against smoking in public places.

Wolf Prize : India-born conductor Zubin Mehta and Romania-born composer Gyorgy Ligeti shared the 1995-96 Wolf Prize for their musical achievements.

World Food Prize : Dr. Walter Plowright of the United Kingdom was on September 22, 1999 awarded the prestigious \$250,000 World Food Prize, 40 years after he developed a vaccine to rid the world of rinderpest, one of the most lethal cattle diseases.

The award carries \$200,000. It is given annually in recognition of those who have advanced human development by improving the quality, quantity or availability of the world's food supply.

World Statesman Award: President Mr. K.R. Narayanan was conferred Appeal of Conscience Foundation World Statesman Award on April 28, 1998 in New York for his accomplishment as a statesman, author and diplomat.

Youth Volunteers Against Poverty Awards : Ms. C. Devika from Salem (Tamil Nadu) and Mr. Khem Raj Sharma from Jammu and Kashmir were presented the Youth Volunteers Against Poverty Awards, 1999 on October 17, 1999. Ms. Devika was presented the award for showing exemplary commitment towards working for the eradication of poverty and human advancement among poor people in eight villages of Salem district of Tamil Nadu. Mr. Sharma was conferred the award for poverty eradication in 120 villages in the Samba block of Jammu district. The awards given by the Nehru Yuva Kendra Sangathan (NYKS) and the United Nations Development Programme (UNDP), carry a cash prize of Rs. 15,000, a citation and a plaque.

11. Latest Who's Who*

INDIA

UNION GOVERNMENT

Mr. K.R. Narayanan : President

Mr. Krishan Kant : Vice-President

COUNCIL OF MINISTERS

Mr. Atal Behari Vajpayee: Prime Minister and also in charge of the Ministries of Atomic Energy, Food Processing, Personnel, Public Grievances and Pensions, Space, all other departments not allocated to any other Cabinet Minister or Minister of State with independent charge.

CABINET MINISTERS

Mr. L.K. Advani : Home
Mr. George Fernandes : Defence
Mr. Yashwant Sinha : Finance
Mr. Jaswant Singh : External Affairs
Ms. Mamata Banerjee : Railways
Mr. Ram Vilas Paswan : Communications
Mr. Sharad Yadav : Civil Aviation
Mr. Murasoli Maran : Commerce & Industry
Mr. Manohar Joshi : Heavy Industries & Public Enterprises
Mr. Ram Naik : Petroleum & Natural Gas
Mr. Satyanarayan Jaitiya : Labour
Mr. Pramod Mahajan : Parliamentary Affairs & Information Technology
Mr. Nitish Kumar : Agriculture
Mr. Ananth Kumar : Culture, Sports & Youth Affairs
Mr. Sunderlal Patwa : Rural Development
Mr. Juel Oram : Tribal Affairs
Mr. Suresh Prabhu : Chemicals & Fertilisers
Mr. Shanta Kumar : Consumer Affairs & Public Distribution
Mr. T.R. Balu : Environment & Forests
Mr. Jagmohan : Urban Development & Poverty Alleviation
Mr. Ram Jethmalani : Law, Justice & Company Affairs
Mr. P.R. Kumaramangalam : Power
Mr. Murlu Manohar Joshi : HRD, Science & Technology and Ocean Development
Mr. Kashiram Rana : Textiles
Mr. Naveen Patnaik : Mines & Minerals
Mr. Sukhdev Singh Dhindsa : Works & Estates
Mr. Rajnath Singh : Surface Transport
Mr. C.P. Thakur : Water Resources

MINISTERS OF STATE

(Independent Charge)

Ms. Maneka Gandhi : Social Justice & Empowerment
Ms. Uma Bharati : Tourism

Mr. Arun Jaitley : Information & Broadcasting and Deptt. of Disinvestment

Mr. M. Kannappan : Non-conventional Energy Sources

Mr. Dilip Ray : Steel

Ms. Vasundhara Raje : Small Scale Industries, Agro & Rural Industries (Independent) and in the Deptts. of Personnel & Training, Pensioners' Welfare, Atomic Energy and Space (under PM)

Mr. N.T. Shanmugham : Health & Family Welfare

MINISTERS OF STATE

Mr. Ramesh Bais : Chemicals & Fertilisers
Mr. Bijoya Chakravarty : Water Resources
Mr. Shriram Chauhan : Consumer & Public Distribution

Mr. Bandaru Dattatraya : Urban Development
Mr. Jaysinghrao Gaikwad Patil : HRD
Mr. Santosh Kumar Gangwar : Petroleum and Natural Gas & Parliamentary Affairs
Mr. Chaman Lal Gupta : Civil Aviation
Mr. Vallabhbhai Kathirya : Heavy Industries and Public Enterprises

Mr. Faggan Singh Kulaste : Tribal Affairs
Mr. V. Dhananjay Kumar : Finance
Mr. Bangaru Laxman : Railways
Ms. Sumitra Mahajan : HRD
Mr. Subhash Maharia : Rural Development
Mr. Babulal Marandi : Environment & Forests
Ms. Jayawantibehn Mohta : Power
Mr. Munni Lal : Labour & Employment
Mr. Omar Farooq Abdullah : Commerce & Industry

Mr. Ajit Kumar Panja : External Affairs
Mr. Hiran Pathak : Defence
Mr. Devendra Pradhan : Surface Transport
Mr. E. Pannuswami : Petroleum
Mr. A. Raja : Rural Development
Mr. O. Rajagopal : Law, Justice & Company Affairs and Parliamentary Affairs
Dr. Raman : Commerce & Industry
Mr. N.G. Ramachandran : Textiles
Mr. Vidaya Sagar Rao : Home
Mr. S.B.P.P.K. Satyanarayanan Rao : Agriculture
Mr. Bachi Singh Rawat : Department of Science & Technology

* As on December 17, 1999

Mr. Syad Shahnawaz Hussain : Food Processing
 Mr. Tapan Sikdar : Communications
 Mr. Digvijay Singh : Railways
 Mr. T.H. Chaaba Singh : Culture, Youth Affairs, Sports
 Mr. V. Sreenivasa Prasad : Consumer Affairs & Public Distribution

Mr. I.D. Swami : Home
 Dr.(Ms) Rila Varma : Mines & Minerals
 Mr. Balasahab Vikha Patil : Finance
 Mr. Hukumdeo Narayan Yadav : Agriculture
 Mr. Arun Shauria : Planning, Statistics and Programme Implementation, Department of Administrative Reforms in the Ministry of Personnel, Public Grievances and Pensions

CHIEFS OF ARMED FORCES

Supreme Commander : President Mr. K.R. Narayanan
 Chief of the Army Staff : General V.P. Malik

Chief of the Air Staff : Air Chief Marshal Anil Yashwant Tipnis
 Chief of the Naval Staff : Admiral Sush Kumar

CAPITALS, GOVERNORS AND CHIEF MINISTERS OF STATES

State	Capital	Governor	Chief Minister
Andhra Pradesh	Hyderabad	Mr. C. Rangarajan	Mr. N. Chandrababu Naidu
Arunachal Pradesh	Itanagar	Mr. Arvind Dave	Mr. Mukut Mithi
Assam	Dispur	lt-Gen.(Rtd.) S.K. Sinha	Mr. Prafulla Kumar Mahanta
Bihar	Patna	Mr. Vinod Chandra Pande	Mrs. Rabri Devi
Goa	Panaji	Mr. Mahammad Fazal	Mr. Francisco Sardinha
Gujarat	Gandhinagar	Mr. S.S. Bhandari	Mr. Keshubhai Patel
Haryana	Chandigarh	Mr. Mahabir Prasad	Mr. Om Parkash Chautala
Himachal Pradesh	Shimla	Mr. Vishnu Kant Shastri	Mr. Prem Kumar Dhumal
Jammu and Kashmir	Srinagar (Summer) Jammu (Winter)	Mr. Girish Chandra Saxena	Dr. Farooq Abdullah
Karnataka	Bangalore	Mrs. V.S. Rama Devi	Mr. S.M. Krishna
Kerala	Thiruvananthapuram	Mr. Justice Sukhdev Singh Kang	Mr. E.K. Nayanar
Madhya Pradesh	Bhopal	Mr. Bhai Mahavir	Mr. Digvijay Singh
Maharashtra	Mumbai	Dr. P.C. Alexander	Mr. Vilasrao Deshmukh
Manipur	Imphal	Mr. Ved P. Marwah	Mr. Wahengbam Nipamachao Singh
Meghalaya	Shillong	Mr. M.M. Jacob	Mr. B.B. Lyngdoh
Mizoram	Aizawl	Mr. Anandam Padmanabhan	Mr. Zoramthanga
Nagaland	Kohima	Mr. Om Prakash Sharma	Mr. S.C. Jamir
Nagaland	Bhubaneswar	Mr. M.M. Rajendron	Mr. Hemananda Biswal
Nagaland	Chandigarh	lt-Gen.(Rtd.) J.F.R. Jacob	Mr. Parkash Singh Badal
Nagaland	Jaipur	Mr. Justice Anshuman Singh	Mr. Ashok Gehlot
Nagaland	Gangtok	Chaudhury Randhir Singh	Mr. Pawan Kumar Chamling
Nagaland	Chennai	Ms. Justice M. Fathima Bevi	Mr. M. Karunanidhi
Nagaland	Agartala	Prof. Siddashwar Prasad	Mr. Manik Sarkar
Nagaland	Lucknow	Mr. Suraj Bhan	Mr. Ram Prakash Gupta
Nagaland	Calcutta	Mr. Viron J. Shah	Mr. Jyoti Basu

CAPITALS, LT. GOVERNORS/ADMINISTRATORS AND CHIEF MINISTERS OF UNION TERRITORIES

Union Territory	Capital	Lt. Governor/Administrator	Chief Minister
Andaman and Nicobar	Port Blair	Mr. Ishwari Prasad Gupta	—
Chandigarh	Chandigarh	lt-Gen.(Rtd.) J.F.R. Jacob	—
Dadra and Nagar Haveli	Silvassa	Mr. S.P. Aggarwal	—
Daman and Diu	Daman	Mr. Mohammad Fazal	—
Delhi	Delhi	Mr. Vijai Kumar Kapoor	Ms. Sheila Dikshit
Lakshadweep	Kavaratti	Mr. Rajeev Talwar	—
Pondicherry	Pondicherry	Ms. Rajani Rai	Mr. R.V. Janakiraman

HEADS OF IMPORTANT OFFICES

Mr. Atal Behari Vajpayee : Chairman, Planning Commission.
 Mr. K.C. Pant : Deputy Chairman, Planning Commission.
 Mr. Krishan Kant : Chairman, Rajya Sabha.
 Mrs. Najma Heptullah : Deputy Chairperson, Rajya Sabha.
 Mr. G.M.C. Balayagi : Speaker, Lok Sabha.
 Mr. P.M. Sayeed : Deputy Speaker, Lok Sabha.
 Mr. Justice A.S. Anand : Chief Justice of India.
 Dr. M.S. Gill : Chief Election Commissioner.
 Dr. A.P.J. Abdul Kalam : Principal Scientific Adviser.
 Mr. Brajesh Mishra : Principal Secretary to the Prime Minister.
 Mr. Prabhat Kumar : Cabinet Secretary.
 Mr. S.S. Sahani : Secretary-General, Rajya Sabha.
 Mr. G.C. Malhotra : Secretary-General, Lok Sabha.
 Mr. Harish Salve : Solicitor General of India.
 Mr. Sali J. Sorabjee : Attorney General of India.
 Mr. Lalit Mansingh : Foreign Secretary.
 Mr. Kamal Pande : Home Secretary.
 Mr. P. Mankad : Finance Secretary.
 Mr. A.S. Dulat : Director, Research and Analysis Wing.
 Mr. Shyamal Dutta : Director, Intelligence Bureau.
 Mr. R.K. Raghavan : Director, Central Bureau of Investigation.
 Prof. Krishnaswamy Kasturirangan : Chairman, Space Commission and ISRO.
 Dr. R. Chidambaram : Chairman, Atomic Energy Commission.
 Mr. Anil Kakadkar : Director, Bhabha Atomic Research Centre.
 Mr. S.P. Sukhatme : Chairman, Atomic Energy Regulatory Board.
 Mr. E.N. Ram Mahan : Director-General, BSF.
 Mr. Prithvi Mishra : Director-General, Central Industrial Security Force.
 Lt. Gen. (retd.) Surinder Nath : Chairman, UPSC.
 Mr. K.M. Lal : Chairman, Staff Selection Commission.
 Mr. Dileep Singh Bhuria : Chairman, National Commission for SCs and STs.
 Mr. Mahd. Hidayatullah Khan : Chairman, National Minorities Development and Finance Corporation.
 Mr. Justice Shyam Sunder : Chairman, National Commission for Backward Classes.
 Mr. Anil Kumar : Chairman, Telecom Commission.

Mr. Justice S.S. Sadhi : Chairman, Telecom Regulatory Authority of India.
 Mr. Justice B.P. Jeevan Reddy : Chairman, Law Commission.
 Dr. Amrita Patel : Chairperson, National Dairy Development Board (NDDB).
 Lt. Gen. Mardegai : Director-General, Border Roads Organisation.
 Mr. M.N. Sabharwal : Director-General, CRPF.
 Mr. Rajiv Rattan Shah : Chief Executive Officer (Aging), Prasar Bharati.
 Mr. Nirmal Kumar Ganguly : Director-General, Indian Council of Medical Research.
 Mr. Justice A.N. Divacha : Chairman, Municipalities and Restrictive Trade Practices Commission.
 Mr. A.C. Wadhawan : Chairman, Public Enterprises Selection Board.
 Dr. S. Rama Gawda : Chairman, All India Council for Technical Education.
 Mr. R.M. Vijayanunni : Registrar-General of India and Census Commissioner.
 Mr. Bimal Jalan : Governor, RBI.
 Mr. Justice S.C. Sen : President, National Consumer Disputes Redressal Commission.
 Dr. Hari Pratap Gautam : Chairman UGC.
 Mr. Ravindra Varma : Chairman, National Commission on Labour.
 Mr. Rajendra Singh : Chairman and Managing Director, NTPC.
 Mr. Justice P.B. Sawant : Chairman, Press Council of India.
 Mr. Ajit Bhattacharjee : Director, Press Institute of India.
 Mr. N. Ravi : Chairman, Press Trust of India.
 Ms. Shabha Subramanyam : Chairperson, United News of India, Press Council of India Society.
 Mr. V.K. Agarwal : Chairman, Railway Board.
 Mr. G. Krishnamurthy : Chairman, LIC.
 Mr. D. Sengupta : Chairman, GIC.
 Mr. M. Rangachary : Chairman, Insurance Regulatory Authority.
 Mr. Anil Bajaj : Chairman, Indian Airlines.
 Mr. Ravi Kant : Chairman, Central Board of Direct Taxes.
 Mr. D.S. Salanki : Chairman, Central Board of Excise and Customs.
 Mr. B.C. Bara : Chairman and Managing Director, ONGC Limited.
 Mr. Arvind Pande : Chairman, SAIL.
 Mr. M.A. Pathan : Chairman, Indian Corporation.

Mr. V.K. Shunglu : Comptroller and Auditor General of India.

Mr. Justice Ashok Agarwal : Chairman, Central Administrative Tribunal (CAT).

Mr. G.S. Vaidya : Chairman, State Bank of India.

Mr. P.S. Subramanyam : Chairman, Unit Trust of India.

Mr. G.P. Gupta : Chairman, Industrial Development Bank of India.

Mr. M.S. Verma : Chairman, IDBI Bank.

Mr. Justice Ajay Kumar Bonerji : Chairman, Company Law Board.

Mr. Kamallesh Sharma : India's Permanent Representative to the UN.

Mr. Ratan Tata : President, National Council of Applied Economic Research.

Dr. R.A. Mashelkar : Director-General, CSIR.

Dr. R.S. Paroda : Director-General, Indian Council of Agricultural Research.

Mr. N. Vittal : Chief Vigilance Commissioner.

Mr. Justice Jagdish Sharan Verma : Chairman, National Human Rights Commission.

Mr. Ramash Chandra : Chairman, Central Water Commission.

Mr. Surinder Singh Jakhra : Chairman, IFFCO.

Ms. Vibha Parthasarthy : Chairperson, National Commission for Women.

Ms. Mridula Sinha : Chairperson, Central Social Welfare Board.

Mr. Suresh Kalmadi : President, Indian Olympic Association.

Dr. S.R. Nadig : Chairman, National Book Trust.

Dr. Abdul Waheed Khan : Vice-Chancellor, IGNOU.

Mr. Rahul Bajaj : Chairman, CIL.

Mr. Jagdish Khattar : Managing Director, Maruti Udyog Ltd.

WORLD

Albania : President-Rexhep Mejdani; Prime Minister-Ilir Meta; Capital-Tirana.

Algeria : President-Abdelaziz Bouteflika; Prime Minister-Ahmed Ouyahia; Capital-Algiers.

Argentina : President-Carlos S. Menem (Fernando De La Rúa to assume office on December 10, 1999); Capital-Buenos Aires.

Australia : Governor General-William Deane; Prime Minister-John Howard; Capital (Federal)-Canberra.

Austria : President-Thomas Klestil; Chancellor-Viktor Klima; Capital-Vienna.

Belarus : President-Aleksandr Lukashenko; Prime Minister-Sergei Ling; Capital-Minsk.

Bangladesh : President-Shahabuddin Ahmed; Prime Minister-Sheikh Hasina Wajed; Capital-Dhaka.

Belgium : King-Albert II; Prime Minister-Guy Verhofstadt; Capital-Brussels.

Bhutan : King-Jigme Singye Wangchuk; Capital-Thimphu.

Bolivia : President-Gonzalo Sanchez de Lozada; Capital-La Paz.

Brazil : President-Fernando Cardoso; Capital-Brasilia.

Bulgaria : President-Petar Stoyanov; Prime Minister-Zhan Videnov; Capital-Sofia.

Burkina Faso : President-Blaise Compaore; Capital-Ouagadougou.

Cambodia : King-Prince Norodom Sihanouk; First Prime Minister-Ung Huot; Second Prime Minister-Hun Sen; Capital-Phnom Penh.

Canada : Governor General-Roman Hnatyshyn; Prime Minister-Jean Chretien; Capital-Ottawa.

Chile : President-Eduardo Frei; Capital-Santiago.

China : President-Jiang Zemin; Prime Minister-Zhu Rongji; Capital-Beijing.

Colombia : President-Ernesto Samper Pizano; Capital-Bogota.

Congo (formerly, Zaire) : President-Laurent Desire Kabila; Capital-Kinshasa.

Costa Rica : President-Jose Maria Figueres; Capital-San Jose.

Croatia : Prime Minister-Zlatko Matosevic; Capital-Zagreb.

Cuba : President-Fidel Castro; Capital-Havana.

Czech Republic : President-Vaclav Havel; Prime Minister-Josef Tassovsky; Capital-Prague.

Denmark : Queen-Margreth II; Prime Minister-Poul Nyrup Rasmussen; Capital-Copenhagen.

Egypt : President-Hasni Mubarak; Prime Minister-Kamal El-Ghazouly; Capital-Cairo.

El Salvador : President-Francisco Flores; Capital-San Salvador.

Ethiopia : President-Dr. Vigashu Gerar; Prime Minister-Moses Zenawi; Capital-Addis Ababa.

Fiji : President-Ratu Sir Kamisese Mara; Prime Minister-Mahendra Chaudhry; Capital-Suva.

Finland : President-Martti Ahtisaari; Prime Minister-Kalevi Sorsa; Capital-Helsinki.

France : President-Jacques Chirac; Prime Minister-Lionel Jospin; Capital-Paris.

Germany : President-Johannes Rau; Chancellor-Gerhard Schröder; Capital-Bonn.

Greece : President-Constantinos Stephanopoulos; Prime Minister-Costas Simitis; Capital-Athens.

Haiti : President-Rene Preval; Capital-Port-au-Prince.

Hungary : President-Arpád Göncz; Prime Minister-Gyula Horn; Capital-Budapest.

Indonesia : *President*-Abdurrahman Wahid; *Capital*-Jakarta.

Iran : *President*-Mahammed Khatami; *Prime Minister*-Mir Hussein Mousavi; *Capital*-Teheran.

Iraq : *President*-Saddam Hussein; *Capital*-Baghdad.

Israel : *President*-Ezer Weizman; *Prime Minister*-Benjamin Netanyahu; *Capital*-Jerusalem.

Italy : *President*-Carlo Azeglio Ciampi; *Prime Minister*-Massimo D'Alema; *Capital*-Rome.

Japan : *Emperor*-Akihito; *Prime Minister*-Keizo Obuchi; *Capital*-Tokyo.

Jordan : *King*-Abdullah; *Prime Minister*-Abdullah Rawabdeh; *Capital*-Amman.

Kazakhstan : *President*-Nursultan Nazarbayev; *Prime Minister*-Nurlan Balgimbayev; *Capital*-Astana.

Kenya : *President*-Daniel Arap Moi; *Capital*-Nairobi.

Korea, North : *President*-Marshal Kim Jong Il; *Prime Minister*-Hang Sang Nam; *Capital*-Pyongyang.

Korea, South : *President*-Kim Dae Jung; *Prime Minister*-Kah Kun; *Capital*-Seoul.

Kuwait : *Emir*-Shaikh Jaber Al Ahmed Al Sabah; *Prime Minister*-Shaikh Saad Al Abdullah Al Sabah; *Capital*-Kuwait.

Kyrgyzstan : *President*-Askar Akayev; *Prime Minister*-Apas Djumagular; *Capital*-Bishkek.

Laos : *President*-Gen. Khamtay Siphandana; *Prime Minister*-Gen. Sisavath Keabounphanh; *Capital*-Vientiane.

Libya : *President*-Col. Muammar El-Gaddafi; *Prime Minister*-Abu Zeid Omar Dourda; *Capital*-Tripoli.

Madagascar : *President*-Didier Ratsiraka; *Prime Minister*-Pascal Rakatomanga; *Capital*-Antananariva.

Malawi : *President*-Bakili Muluzi; *Capital*-Lilongwe.

Malaysia : *King*-Sultan Salahuddin Abdul Aziz Shah; *Prime Minister*-Dr. Mahathir bin Mahamad; *Capital*-Kuala Lumpur.

Maldives : *President*-Maumoon Abdul Gayoom; *Capital*-Male.

Mauritius : *President*-Cassam Uteem; *Prime Minister*-Navinchandra Ramgoolam; *Capital*-Port Louis.

Morocco : *King*-Sidi Mohammed; *Prime Minister*-Abdelrahmane Youssef; *Capital*-Rabat.

Myanmar (Burma) : *President*-Maung Maung; *Prime Minister*-Gen. Than Shwe; *Capital*-Yangon (Nagoya).

Namibia : *President*-Sam Nujoma; *Prime Minister*-Hage Geingob; *Capital*-Windhoek.

Nauru : *President*-Rene Harris; *Capital*-Yaren District.

Nepal : *King*-Birendra Bir Bikram Shah Dev; *Prime Minister*-Krishna Prasad Bhattarai; *Capital*-Kathmandu.

New Zealand : *Governor General*-Sir Paul Holmes; *Prime Minister*-Ms. Helen Clark; *Capital*-Wellington.

Niger : *President*-Dauda Malam Wanko; *Prime Minister*-Ahmedou Boubacar Cissé; *Capital*-Niamey.

Nigeria : *President*-Gen. Olusugun Obasanjo; *Capital*-Abuja.

Norway : *King*-Crown Prince Harald; *Prime Minister*-Mr. Kjell Magne Bondevik; *Capital*-Oslo.

Pakistan : *Chief Executive*-Gen. Pervez Musharraf; *President*-Muhammad Rafiq Tarar; *Capital*-Islamabad.

Panama : *President*-Ms. Mireya Moscoso; *Capital*-Panama City.

Paraguay : *President*-Alborno Fujimari; *Prime Minister*-Victor J. Way; *Capital*-Lima.

Philippines : *President*-Joseph Estrada; *Capital*-Manila.

Poland : *President*-Aleksander Kwasniewski; *Prime Minister*-Jozef Buzek; *Capital*-Warsaw.

Portugal : *President*-Jorge Sampaio; *Prime Minister*-Antonio Guterres; *Capital*-Lisbon.

Romania : *President*-Emil Constantinescu; *Prime Minister*-Alexandru Athanasiu; *Capital*-Bucharest.

Russia : *President*-Boris Yeltsin; *Prime Minister*-Vladimir Putin; *Capital*-Moscow.

Rwanda : *President*-Pastor Bizimungu; *Capital*-Kigali.

Saudi Arabia : *King*-King Fahd bin Abdul Aziz; *Capital*-Riyadh.

Serbia : *President*-Slobodan Milosevic; *Prime Minister*-Mirko Marjanovic; *Capital*-Belgrade.

Sri Lanka : *President*-M. A. Jayaratne; *Capital*-Colombo.

Singapore : *President*-S. R. Nathan; *Prime Minister*-Goh Chok Tong; *Capital*-Singapore.

Slovakia : *President*-Michal Kovac; *Prime Minister*-Vladimir Meciar; *Capital*-Bratislava.

South Africa : *President*-Thabo Mbeki; *Capital*-Cape Town (Legislative), Pretoria (Executive).

Spain : *King*-Juan Carlos I; *Prime Minister*-Mariano Aznar; *Capital*-Madrid.

Sri Lanka : *President*-M. A. Jayaratne; *Prime Minister*-M. A. Jayaratne; *Capital*-Colombo.

Sudan : *President*-Omar Hassan Ahmad al-Bashir; *Capital*-Khartoum.

Sweden : *King*-Carl XVI Gustaf; *Prime Minister*-Goran Persson; *Capital*-Stockholm.

Syria : *President*-Hafez Assad; *Prime Minister*-Mawlaad al-Dabbas; *Capital*-Damascus.

Taiwan : *President*-Lien Chan; *Capital*-Taipei.

Tanzania : *President*-Julius Nyerere; *Prime Minister*-Mwaka wa Mwakwa; *Capital*-Dar es Salaam.

Togo : *President*-Gnassingbe Eyadema; *Prime Minister*-Gnassingbe Eyadema; *Capital*-Lome.

Thailand : King-Bhumibol Adulyadej; Prime Minister-Mr. Chuanleekpai; Capital-Bangkok.

Trinidad and Tobago: President-A.N.R. Robinsan; Prime Minister-Vasudeva Pandey; Capital-Port of Spain.

Tunisia : President - Zine al-Abidine Ben Ali; Prime Minister-Hamed Karoui; Capital-Tunis.

Turkey: President-Suleyman Demirel; Prime Minister-Bulent Ecevit; Capital-Ankara.

United Arab Emirates : President-Sheikh Zayed bin Sultan Al-Nahayan; Prime Minister-Sheikh Maktoum bin Rashid; Capital-Abu Dhabi.

United Kingdom : Queen-Elizabeth
Prime Minister-Tony Blair; Capital-London.

United States of America : President-Bill Clinton
Capital-Washington, D.C.

Vanuatu : President-Jean-Marie Leye; Capital-Vila.

Vietnam : President-Tran Duc Luang; Prime Minister-Phan Van Khai; Capital-Hanoi.

Zambia : President-Frederick Chiluba; Prime Minister-General M.N. Masheke; Capital-Lusaka.

Zimbabwe : Executive President-Robert Mugabe
Capital-Harare.

HEADS OF IMPORTANT OFFICES

Kofi Annan : Secretary-General, United Nations Organisation.

Laure Frechette : First Deputy Secretary General, UN.

James Wolfensohn : President, World Bank (International Bank for Reconstruction and Development).

Anil Saad : Vice-President, World Bank.

Michel Camdessus : Managing Director, International Monetary Fund.

Kaichiro Matsuura : Director-General, UNESCO.

Jacques Diouf : Director-General, Food and Agricultural Organisation (FAO).

Juan Samavia : Director-General, International Labour Organisation (ILO).

Ms. Carol Bellamy : Executive Director, United Nations International Children's Emergency Fund (UNICEF).

Ms. Gra Harlem Brundtland : Director-General, World Health Organisation (WHO).

Mark M. Brown : Director-General, United Nations Development Programme (UNDP).

Donald Johnston : Secretary-General, Organisation of Economic Cooperation and Development (OECD).

Jose Maria Ruda : President, International Court of Justice.

Tadiao China : President, Asian Development Bank.

C. S. Krishnamurthy : Vice-President, Asian Development Bank.

Omar Kabhaj : President, African Development Bank.

Thaba Mbeki : Chairman, Non-Aligned Movement.
Emaka Anyaoku : Secretary-General, Commonwealth.

Juan Antonio Samaranch : President, International Olympic Committee.

Blaise Compaore : Chairperson, Organisation of African Unity (OAU).

Ramona Prodi : President, European Commission.

Rubens Ricupera : Secretary-General, UNCTAD.
Mauricia Maria J. Campas : Director-General, UNIDO.

Jammel Al Hujilan : Secretary-General, Co-operation Council.

Azzedine Laraki : Secretary-General, Organisation of Islamic Conference.

Yasser Arafat : Chairman, Palestine Liberation Organisation (PLO).

Erwin Jose Arrieta : President, Organisation of Petroleum Exporting Countries (OPEC).

Dr. Subrata : General Secretary, Organisation of Petroleum Exporting Countries.

Cesar Gaviria : Chairman, Organisation of American States.

Salim Ahmed Salim : Secretary-General, Organisation of African Unity.

Sam Nujoma : President, South-West African People's Organisation (SWAPO).

Mahammed El Baradei : Director-General, International Atomic Energy Agency (IAEA).

George Robertson : Secretary-General, NATO.

Mike Moore : Director-General, World Trade Organisation (WTO).

Ms. Nafis Sadik : Executive Director, United Nations Population Fund.

Wally N'Daw : Secretary-General, Habitat II.

Nihal Radriga : Secretary-General, SAARC.

Ajit Singh : Secretary-General, ASEAN.

Mark Waad : Editor-in-Chief, Reuters.
Lamine Diack : President, International Amateur Athletic Federation (IAAF).

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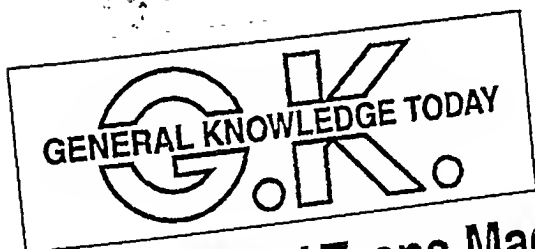
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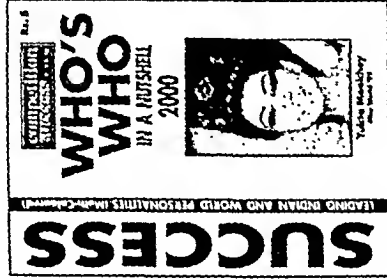
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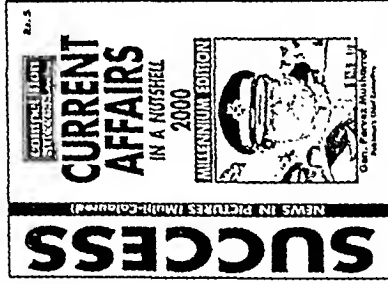
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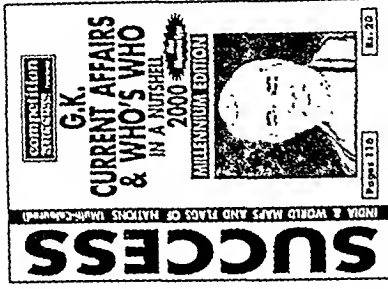
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Part XII : News in 1999



Prof. Amartya Sen, 1998 Nobel Prize Winner For Economics, was conferred India's Highest Civilian Honour, Bharat Ratna, on January 18, 1999



France's Zinedine Zidane (C), voted FIFA's World Player of the Year, Brazilian striker Ronaldo (L) and Croatia Davor Suker (R) with their respective trophies presented by FIFA in Barcelona on February 1, 1999



Vibillant Italian Director Roberto Benigni (L) who received an Oscar for Best Actor for his role in "Life is Beautiful" and Actress Gwyneth Paltrow (R) with the Oscar for Best Actress for her role in "Shakespeare in Love" at the 71st Annual Academy Awards in Los Angeles on March 21, 1999



Rahul Dravid (L) became the third Indian to score two centuries in a Test Match (against New Zealand in Hamilton on January 6, 1999) after Vijay Hazare and Sunil Gavaskar. Dravid was also the highest scorer (461) in World Cup '99. Anil Kumble (R) joined the select band of Indian Cricketers on October 24, 1999 who have taken 250 or more wickets in Test Matches



Agni II IRBM was successfully test-fired from a new test range at Wheeler Island (Balasore) in Orissa on April 11, 1999



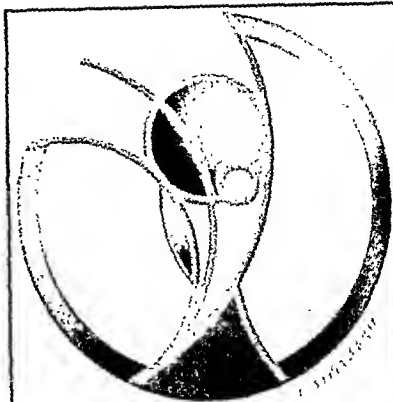
Prime Minister Mr. Atal Behari Vajpayee in Mumbai on the first anniversary of Pasharan II on May 11, 1999



Mr. Ehud Barak who was elected as new Prime Minister of Israel on May 18, 1999 defeating conservative incumbent, Mr. Benjamin Netanyahu



Representatives of the world's four leading trading powers, Canada, the European Union, Japan and the United States, attending the plenary session of the Quadilateral Trade Ministers Meeting in Tokyo on May 12, 1999



2002 FIFA WORLD CUP KOREA JAPAN

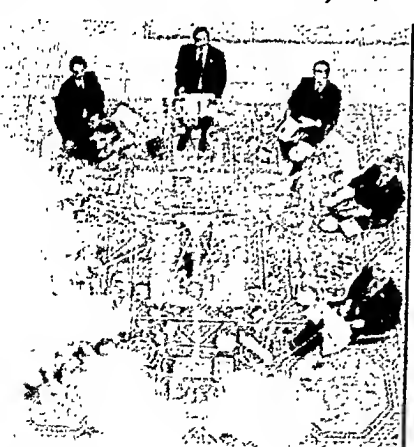
The Official Emblem for the 2002 World Cup Football Championships to be co-hosted by Japan and Korea was revealed for the first time on May 31, 1999 simultaneously in Tokyo, Seoul and Zurich



Miss Batswana '99 Mpule Kwelagabe (19) was crowned Miss Universe '99 on May 26, 1999. Miss Philippines '99 Miriam Quiambaa is at her left



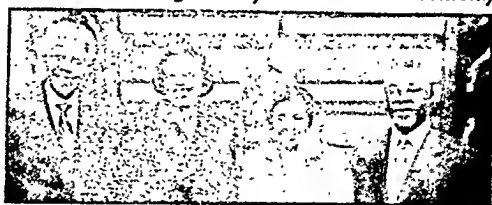
Usha Yadav (L), who has the distinction of being the only woman to scale Mt. Everest twice along with Cathay O'Dowd of South Africa, was the leader of the first Indian expedition—the Millennium Indian Everest expedition, 1999 that rewrote the mountaineering history when three of its members scaled the Mount Everest from the treacherous Kangsung face on May 28, 1999



The Canadian Prime Minister, Mr. Jean Chretien (Front) posing for photograph at G-8 Summit, in Cologne (Germany) on June 20, 1999. With him are (clockwise from left) the French President, Jacques Chirac, US President, Bill Clinton, British Prime Minister, Tony Blair, German Chancellor, Gerhard Schroeder, Japanese Prime Minister, Keizo Obuchi, Italian Prime Minister Massimo D'Alema, the outgoing President of European Commission, Jacques Delors and Russian President, Boris Yeltsin



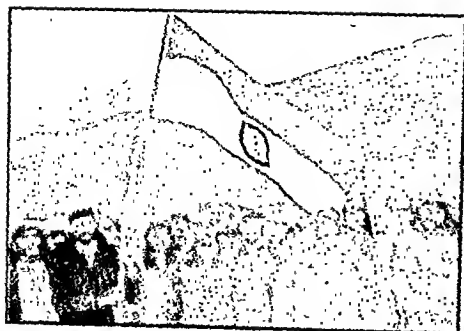
Jubilant Australian Captain Steve Waugh lifts the World Cup after defeating Pakistan by eight wickets in the final at Lords on June 20, 1999 (Lance Klusener of South Africa emerged Player of the Tournament)



Former South African President Nelson Mandela and his wife Graca Machel (2nd L) with the new President Thabo Mbeki (Extreme R) and his wife Zanele (3rd L) in Cape Town (South Africa) on June 14, 1999



Jubilant Steffi Graf (L) with French Women's Singles final trophy on June 6, 1999 and Andre Agassi (R) with French Open Men's Singles final trophy on June 6, 1999 in Paris



The victorious Indian Jawans of 18 Grenadiers flying aloft the Indian tricolour after recapturing Tiger Hills in Drass sector on July 19, 1999



Mahesh Bhupathi (l) and Leander Paes holding Wimbledon trophies after winning the men's doubles on July 4, 1999



Ms Lalitha Chandrasekhar, wife of India-born Nobel Laureate S. Chandrasekhar addressing the media at the Kennedy Space Center in Florida about the Chandra X ray Observatory (named after her husband) which was launched on the US space shuttle Columbia later on July 23, 1999



Lindsay Davenport of the US with her Wimbledon trophy after winning the women's singles final on July 4, 1999



(From l) Britain's silver medalist Aileen Williams, South Korea's gold medalist Eun Kyung Lee and bronze medalist Sun Kim after the women's classic event at the 40th Archery World Championship in Riam (Puy-d'Allier) on July 28, 1999



Sri Lankan skipper Sanath Jayasuriya (C) lifting the AWA Cup along with his teammates after defeating Australia in the final of the AWA Cup Triangular Cricket Tournament in Colombo on August 31, 1999



A man looking through the latest book by Taslima Nasreen "Amar Maye Bela" (My Childhood Days) banned both in India and Bangladesh for objectionable content, at a roadside book stall in Calcutta on August 14, 1999



A view of a Total Solar Eclipse from the Iranian city of Nohavand on August 11, 1999

Eight-year-old David Howell from Seaford, UK playing chess at the Mind Sports Olympiad in London on August 29, 1999. He became the youngest person ever to beat a Grand Master (Johan Nunn, 30 years senior to him)



India's renowned herbal cosmetician Shahnaz Hussein receiving the International Golden America Award for excellence in quality from Mr. Jose's Prieto, President of Business Initiative Directions at New York on August 19, 1999



The winner of 22 Grand Slams, Steffi Graf (Germany) announcing her retirement from Tennis at a Press Conference in Heidelberg (Germany) on August 13, 1999



(L to R) : The Presidents of Tajikistan-Emmomali Rakhmonov, Belarus-Alexander Lukashenko, Russia-Boris Yeltsin, Kazakhstan-Nursultan Nazarbayev and Kirgizstan-Askar Akayev, in the Kremlin, attending a meeting of the Interstate Council of the Customs Union of five CIS (Commonwealth of Independent States) countries on October 26, 1999



Argentina's President-elect Fernando De La Rua with his wife in Buenos Aires on October 24, 1999



Thomas Klestil
President of Austria



Sachin Tendulkar, Captain of the Indian Cricket Team for the Australian tour (November 22, 1999-February 13, 2000), has scored 21 Test Centuries, including one Double Test Century (217) and holds world record of 24 centuries in One Days as on November 21, 1999



Andre Agassi, the top ranked Tennis Player as per ATP standings on October 18, 1999



Heads of the States and the Delegates attending the CHOGM in Durban (South Africa) in November 1999



President, Mr. K.R. Narayanan (L) and his wife, Ms. Usha Narayanan (R) being welcomed by the Austrian President, Mr. Thomas Klestil and his wife, Ms. Margot Klestil Laeffler in Vienna (Austria) on November 8, 1999



Sourav Ganguly with his teammates after receiving the Fiat Sienna Car in New Delhi on November 17, 1999 after being declared the Pepsi Cup Man of the Series (India and New Zealand). India won the five One-Day Series by 3-2



Pope John Paul II was in New Delhi for four days from November 5-8, 1999. One of the highlights of his visit was the holy mass conducted in the thickly-crowded Jawahar Nehru Stadium on November 7, 1999



Shattered fishing trawlers lying against the banks of a river in Jagatsinghpur near Paradip after a cyclonic storm and floods devastated many parts of Orissa on October 29, 1999



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Yukta Mookhey

Hearty Congratulations to Miss India (World) Yukta Mookhey
or winning the Miss World title in London on December 4, 1999
by beating 93 other contestants from around the world

